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COTTON

THE TEXTILE MANUFACTURING JOURNAL

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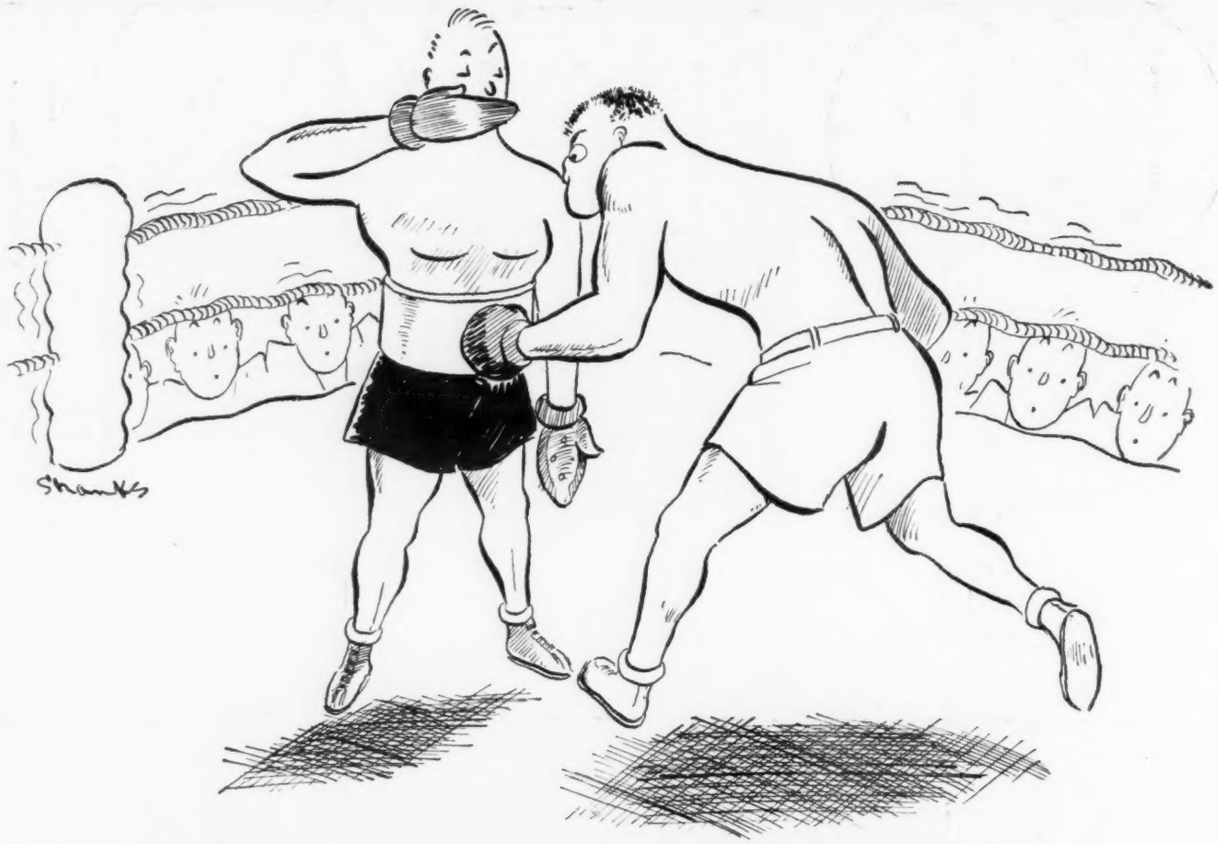
Table of Contents, Page 55.

KNITTING SECTION, Page 697

Advertisers' Index, Page 192.



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Address all communications to COTTON, Grant Bldg., Atlanta, Ga.

Vol. 94 **COTTON** No. 5

April, 1930

W. R. C. SMITH, Publisher
T. W. McALLISTER, Editorial Director
ROBERT W. PHILIP, Editor

Contents

General and Technical—

The Coming Conventions ---- 609
Carding and Spinning Discussed in Atlanta ---- 611
Montgomery Meeting Discusses Carding and Spinning ---- 618
The Testing Laboratory and the Textile Mill ---- 625
Uncalled for Leaks in a Power Plant ---- 628
Pictorial History of Textile Machinery ---- 668
Textile Mill Booklets ---- 696

Current Topics—

Committee D-13 Meets in Charlotte ---- 629
Talk of the Month ---- 629
What the Southern Mills are Doing ---- 630
Cotton Comment ---- 632
New England Mill Situation ---- 634
New Textile Equipment and Publications ---- 639
News Items With a Textile Slant ---- 642
Notes About Men You Know ---- 646
An Old Timer Says— ---- 649

How Other Men Manage—

Preparing Warps for Belting Duck ---- 653
What Causes This "Fuzz" on Sheeting? ---- 654
Why Is This So? ---- 654
Oiled Raw Stock ---- 654
Puts Selvage Threads in Magazine Creels ---- 655
Clamp for Reducing Waste on Beamers ---- 655
Answers to Old-Timer's Last Two Weaving Questions ---- 656
Care and Operation of Fly Frames ---- 659
The Second-Hand and Machinery Upkeep ---- 665
"Achers" and "Acres" ---- 666
Proper Ring and Traveler Sizes for 50s ---- 671
Three Processes of Roving Versus Four ---- 675
A Reader Comments on "What Are We Doing About This?" ---- 681

Knitting Section—

Straightening Needles, Welt Hooks, Narrowing and Transfer Points ---- 699
A History of Hosiery Inspection (Part 7) ---- 711
Discussion Division for Knitters Formed ---- 711
Full-Fashioned Group Division Planned ---- 716
Getting Proper Tension on Seamless ---- 719
Asks About Bleaching Infant's Wool Hose ---- 719
Disagrees With "Tom" About Dyeing ---- 720
Elimination of Wear on Sinkers ---- 721
Keeping the Cylinder Down ---- 722
Answers to Full-Fashioned Questions ---- 722
Letters from an Old Knitter to His Son ---- 727
Among the Knitting Mills ---- 731
The Knit Goods Markets ---- 733
The Yarn Market ---- 746

Published Monthly By

W.R.C. SMITH PUBLISHING COMPANY, Grant Bldg., Atlanta, Ga.

Publishers Also of
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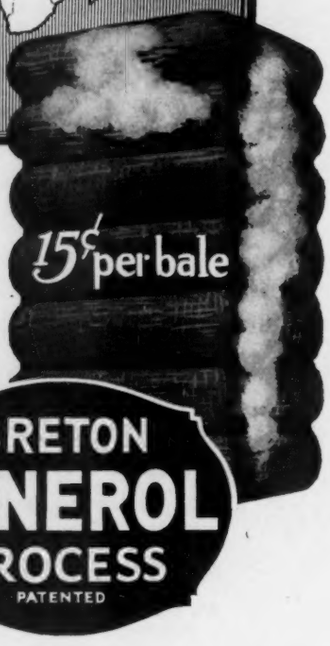

1 CHINA
2 INDIA
3 ENGLAND
4 GERMANY
5 BRAZIL
6 ARGENTINE
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8 COLOMBIA
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COTTON

Vol. 94 April, 1930 No. 6

The Coming Conventions

Show and National Meeting in Boston During Week of April 28th; American Meeting at Pinehurst on May 6th and 7th

THE SEVERAL WEEKS following the publication of this issue of COTTON will bring a number of the important conventions on the textile calendar, and this notice is presented to draw attention to the dates and places of these meetings.

As much as in any other industry, perhaps, textile manufacturers of all groups, within recent years particularly, have come to recognize the value of their association meetings and machinery and equipment expositions or "shows." No extended dissertation, therefore, will be made here along this line. The friendly contact afforded with fellow-manufacturers and others, in the association meetings, as well as the opportunity presented by them to keep in touch with current trends of a general character and those relating to the industry, draw representative attendances for the conventions; and the privilege of examining the latest in up-to-date machinery and equipment is added to these advantages in conjunction with the expositions or "shows." These occasions, therefore, constitute perennial clearing-houses of information and contact which are recognized fully by the manufacturers.

Boston Show and Meeting April 28th to May 3rd

THE INTERNATIONAL TEXTILE EXPOSITION, more popularly known as the Boston Show, will be held in Boston, Mass., during the week of April 28th, extending through Saturday, May 3rd. As has been the usual custom, the show will be held in Mechanics Building, and it will be under the direction of Chester I. Campbell and his capable corps of assistants, which fact insures an exhibition of excellence in every possible respect. A goodly number of manufacturers of equipment and machinery, and purveyors of service to the textile industry have definitely arranged for exhibit and reception space. The affair will of course attract a large number of delegates from the New England section, and in addition, it is anticipated that a representative number of mill men and representatives from the South will be present at various times during the week.

In conjunction with the exhibition, the annual meeting of the National Association of Cotton Manufacturers will be held, as usual. The sessions will be conducted at the Copley-Plaza Hotel, near the exhibition building, and will occur on Wednesday, April 30th, and Thursday, May 1st. Details of a program which will undoubtedly be up to the customary standard in constructive and helpful character will be announced soon.

American Meeting at Pinehurst, May 6th and 7th

DURING THE NEXT WEEK, the annual convention of the American Cotton Manufacturers Association will be held at the Carolina Hotel, Pinehurst, N. C., on Tuesday and Wednesday, May 6th and 7th. Arthur M. Dixon, of Gastonia. N. C., is president, and W. M. McLaurine, of Charlotte, secretary-treasurer. Details of the convention program were not available at press time, but it is understood that arrangements are being made which will include the usual sequence of constructive sessions, including a banquet with suitable entertainment features. Since this famous southern resort is the locale of the meeting, it is understood that many of the delegates will "arrive early

THE FIELD MARSHALS.

Left to right, Lincoln Baylies, president, National Association of Cotton Manufacturers; Chester I. Campbell, director of Boston Show; Russel T. Fisher, secretary, National Association; W. M. McLaurine, secretary, and Arthur M. Dixon, president, American Cotton Manufacturers Association.

and stay late" to partake of the golfing and other diversions afforded by Pinehurst.

Under the strenuous conditions that exist in all phases of the industry, it is anticipated that attendance at both of these meetings will be large and representative; and the programs in prospect will as usual measure up to the demands of the situation.

Exhibitors at Boston Show.

Reverting to the Boston Show, among those firms who have already contracted for space at the exhibi- are the following:

Abeeco Mill, Inc.; Abbott Machine Co.; American Glanzstoff Corp.; American Laundry Machinery Co.; American Moistening Co.; American Tool & Machine Co.; American Pulley Co.; American Wool & Cotton Reporter; Armstrong Machine Works; Ashworth Bros., Inc.; Ashton Valve Co.; Atkinson, Haserick & Co.; Auston & Hastings Co.

The Bahnson Co.; The Baldwin Chain & Mfg. Co.; Barber-Colman Co.; Birch Brothers; Borne Scrymser Co.; The Bristol Co.; Buffalo Foundry & Machine Co.; H. W. Butterworth & Sons Co.

Canadian Textile Journal; Carrier Engineering Corp.; Champlain Silk Mills; Charlotte Chamber of Commerce; Clifford & Lawton, Inc.; Cling-Surface Co.; Clipper Belt Lacer Co.; Consolidated Ashcroft Hancock Co., Inc.; Cooper Hewitt Electric Co.; Crompton & Knowles Loom Works; Curtis & Marble Machine Co.

Davis & Furber Machine Co.; Draper Corp.; Dupont Cellophane Co.; E. I. duPont DeNemours & Co.; Dupont Rayon Co.; Durant Mfg. Co.; The Duriron Co., Inc.

Economy Lubricating Co.; Eclipse Textile Devices, Inc.; Elwell Parker Electric Co.; Fairchild Publications; Fafnir Bearing Co.; Fidelity Machine Co.; Fibre & Fabric; Finnell System, Inc.; J. B. Ford Sales Co.; Foster Machine Co.; General Electric Co.

H. & B. American Machine Co.; John Hetherington Sons, Inc.; R. H. Hinkley Co.; E. F. Houghton & Co.; Howard Bros. Mfg. Co.; Howes Publishing Co.; Hyatt Roller Bearing Co.; Industrial Drives, Inc.; International Nickel Co.; International Engineering Co.; E. H. Jacobs Mfg. Co.; Johnson & Bassett, Inc.; Keene Silk Fibre Mills; Keystone Lubricating Co.

A. C. Lawrence Leather Co.; Lestershire Spool & Mfg. Co.; Oswald Lever Co., Inc.; Link-Belt Co.; Mason Regulator Co.; Melliand, Inc.; Mill Devices Co., Inc.; Minneapolis Honeywell Regulator Co.; Mitsui & Co.; Morse Chain Co.; Mossberg Pressed Steel Corp.; New York & New Jersey Lubricant Co.; Oakite Products, Inc.; Omsted-Flint Corp.

The Pairpoint Corp.; Parks-Cramer Co.; B. F. Perkins & Son, Inc.; The Permutit Co.; Philadelphia Drying Machinery Co.; Philadelphia Grease Co.; Procter & Gamble Distributing Co.; Proctor & Schwartz, Inc. Charles P. Raymond Service, Inc.; Reeves Pulley Co. of N. Y., Inc.; R. I. Warp Stop Equipment Co.; John R. Robinson; Roessler & Hasslacher Chemical Co.; Saco-Lowell Shops; Henry L. Scott & Co.; Scott & Williams, Inc.; S K F Industries, Inc.; W. R. C. Smith Publishing Co. (COTTON); Solvay Sales Corp.; Stafford Co.; Standard Oil of N. Y.; Steele Supply Co.; Alfred Suter.

C. J. Tagliabue Mfg. Co.; Taylor Instrument Companies; The Texas Co.; Textile American Publishing Co.; Textile Colorist; Textile-Finishing Machinery Co.; Textile World Publications; Timken Roller Bearing Co.; Toledo Scale Co.; Tolhurst Machine Works; Lewis E. Tracy Co.

United States Testing Co., Inc.; U. S. Ring Traveler Co.; Universal Winding Co.; Veeder-Root Co.; Wardwell Braiding Machine Co.; Washburn Co.; W. J. Westaway Co., Ltd., Westinghouse Electric & Mfg. Co.; Whitin Machine Works; Whitney Mfg. Co.; Wickwire Spencer Steel Co.

Philadelphia Knitting Show, Week of May 12th

THE ANNUAL Knitting Arts Exhibition will be staged at the Commercial Museum in Philadelphia, during the week of May 12th. The annual convention of the National Association of Hosiery & Underwear Manufacturers, under whose auspices the exposition is conducted, will be held on Thursday, May 15th, beginning at 10:30 A.M. By arrangement with the Association, a special meeting devoted entirely to a discussion of quality mercerized yarns will be held by the Durene Association of America on Wednesday, May 14th, at 2:30 P.M. These meetings will be held in the exhibition building.

The attraction of these events is certain to result in a splendid attendance throughout the week. Chester I. Campbell will, as usual, have charge of the exhibition, which will draw its largest representation of manufacturers of machinery, equipment and supplies for knitting mills, and an unusually large attendance of mill men to inspect these exhibits.

S. T. A. Meets at Myrtle Beach, June 27th and 28th

A LITTLE FURTHER into the summer is scheduled the annual meeting of the Southern Textile Association, to be held at the Ocean Forest Hotel, Myrtle Beach, S. C., on Friday and Saturday, June 27th and 28th, according to announcement by Walter C. Taylor, secretary and treasurer. L. L. Brown, of Malvern, Ark., is president of the association.

A program of great value at the present time is in the making, and, in addition, arrangements are being made, including the privileges of golf courses, for the complete entertainment of the delegates. Special arrangements will be made to transport delegates coming by train to meet trains at Florence, S. C., and carry them to the resort by means of busses.

As usual, the summer meeting of this organization will be utilized in part as a recreational trip, and it is understood that Myrtle Beach, the place selected for the convention, will offer ample opportunity to those attending for complete enjoyment and pleasure.

* * *

While the foregoing is not a complete list, it offers most of the major dates that have been established up to now. These and the several other conventions later to be arranged are all insured of good interest and attendance.

CARDING *and* SPINNING Discussion *in* Atlanta

A LIST OF SUBJECTS of pertinent interest concerning carding and spinning were the basis of an interesting discussion held by the Textile Operating Executives of Georgia, at the semi-annual meeting at Georgia Tech in Atlanta on Tuesday, March 11th. A report of the discussion will be found in the succeeding paragraphs.

An interesting development at this meeting was the decision to form a discussion division to be devoted to mechanical problems, for the master mechanics and engineers of the mills of the state. This followed an informal meeting of a number of superintendents and master mechanics who had been invited for the purpose. The present plans are to select a chairman, and conduct a discussion on plant maintenance as the morning session of the organization's next meeting, to be held in Atlanta next September, the afternoon session to be devoted to slashing and weaving discussion.

THIS IS A REPORT of the extensive discussion carried on by the Georgia mill men at their meeting in Atlanta last month. A varied list of subjects pertaining to carding and spinning practices and methods formed the basis of the meeting, which was well attended.

It is recommended that this complete report be studied carefully, and the information developed applied at each reader's individual mill where it is applicable. COTTON will welcome further discussion of any topic through the "HOW OTHER MEN MANAGE" Department.—THE EDITOR.

The Carding Discussion

At the carding-spinning meeting last month, Frank E. Heymer, superintendent, Piedmont Cotton Mills, Egan, Ga., presided as general chairman. E. H. Rogers, agent, Fulton Bag & Cotton Mills, Atlanta, conducted the carding discussion during the morning; and the spinning discussion in the afternoon was led by D. D. Towers, superintendent, Anchor Duck Mills, Rome, Ga.

Spraying Oil on Cotton.

The first subject discussed at the carding section was, "Have you tried the oil spraying system? How do you like it?"

Mr. Rogers reversed the question by asking any who had tried the system and discarded it to report, with reasons. R. S. Steele, superintendent, LaFayette Cotton Mills, LaFayette, Ga., said, "We tried it out some time ago, but were never fully satisfied that it would not make spots in the cloth, on sulphur colors, cotton jeans. We used it on 2.85, 96x64, 3.15 and 3.00 and 3.33 yard goods; and our main reason for stopping the use of oil was that we had trouble with oil spots in these goods. We had the goods analyzed, and were told that the spots were mineral oil. I do not say positively that they came from the spraying oil, but we thought it safe to stop it." Mr. Rogers asked what size the spots were, and Mr. Steele said they ranged from the size of a quarter to the size of one's hand.

"Where did you introduce the oil?" asked Mr. Rogers.

"We take the cotton from the opener room, and we also have a blowing system for ageing the cotton, and just outside the opener room we have a switch so we can run the cotton through or blow it into this room; and right in that elbow, or just below it, we put the spray head, and caught the cotton right in the face as it came from the cleaning trunks," answered Mr. Steele. He said, in response to another question, that he had examined the outer groove of the pipe on the inside, and found a collection of dirt mixed with the cotton, and also "great long tags hanging there. We thought possibly they came from the opening."

Mr. Steele said that he still has the system, which is of the high pressure type, and that his lay-out consists of a bale breaker, No. 12 machine, and vertical opener. He said he is contemplating trying the oil spray again, and that he will try it this time just ahead of the No. 12 machine. He reported his work to be all white, with no colored work. As to the amount applied, he said he had varied it from 1½ per cent to .1 of one per cent.

"At our mill we are beginning to put the oil spray in," said G. S. Jones, of the Sibley Mfg. Co. "We are making preparations to put it in just as the cotton leaves the No. 12 machine into the vertical opener. Has anybody tried it that way? I would also like to ask if anyone knows what effect the oil will have on dyed cotton when it is too damp or too dry?"

V. E. McDowell, overseer of carding, Eagle & Phenix Mills, Columbus, reported their experience, stating that they had tried the oil spray on their colored work, but had discontinued it, because they were not able to get an even distribution of the oil on account of the crude equipment they were using. He said they did not have the new high pressure equipment, but rather a small atomizer which did not properly distribute the oil on the cotton.

Mr. Rogers asked someone to define the difference between the original equipment and the new high pressure type. J. W. Hames, superintendent, Exposition Cotton Mills, Atlanta, explained that, "the old original equipment was a great big nozzle that did not atomize the oil. It threw it out in small drops. But the

OIL SPRAYING, *regulating picker lap weights, picker settings, straight wire card clothing, card drafts and doffer speeds, revolving clearers, spiral gears—*

These were among the subjects discussed at the Atlanta meeting with relation to the card room.

later type atomizes the oil and mixes it very thoroughly as you distribute it onto the cotton."

Experience of D. D. Towers.

The chairman asked D. D. Towers to give his experience with oil spraying. Mr. Towers replied that, "We are using the high pressure, latest model type of equipment, and apply the oil at the vertical opener with a pressure of around 50 pounds. The vertical opener is the proper place in our opinion, to put the oil in. At the entrance into the vertical, there is an open pipe for the air draft, and we put a turbo-head there to spray the oil. Between this opening, and the lower half of the grids, you will find an accumulation of oil-soaked short lint, and this must be kept cleaned off. This pipe must be cleaned off daily, and it is necessary to clean the grids once a week. There will be no accumulation on the top half of the grids."

FRANK E. HEYMER, superintendent, Piedmont Cotton Mills, Egan, Ga., who is general chairman of the Textile Operating Executives of Georgia.

Referring to oil stains as mentioned by Mr. Steele, Mr. Towers said he did not believe the spraying system was responsible, unless some of this oily waste was falling down and being carried through. He said that mineral oil spots could come from the lubricating oil.

"This is a very satisfactory principle, provided you are making work which you want to spray with oil," continued Mr. Towers. "You eliminate the dust. The character of the waste in the vertical openers is changed. It becomes heavier. I am speaking now purely of white work."

Mr. Towers was asked what percentage of oil he applies, and he strongly emphasized that in his experience .2 of one per cent is enough for all purposes on white work. *"You must keep the percentage down."*

"Do you have less fly in spinning?" asked J. C. Edwards, superintendent, Martha Mill, Thomaston, Ga.

"As far as the spinning goes, I cannot see any difference, but there is decidedly less fly in the card room," replied Mr. Towers.

"How about the dust?" asked Mr. Rogers.

"There is very much more freedom from dust," answered Mr. Towers, explaining that they use the roller brush for stripping, and "you couldn't stay in the room if you didn't have the oil."

"Has anybody using the oil noticed a tendency to choke up on the card clothing?" asked R. J. Jennings, assistant superintendent, Lanett Mill.

"Not if it is used in the right amount," said Mr. Towers, and Frank E. Heymer said he had started out with 1 per cent, as recommended by the manufacturers, and for experiment went up to 1¼ and 1½ per cent, but that the more he put in the worse it got, and he finally brought it back down to .25 of one per cent, where, on colored goods, he got the best results. "The more you use the more you get stuck up," he said.

"How about gumming on the card screens?" asked the chairman. Here again Mr. Towers urged the use of a small amount to give all the desired results and to eliminate such objections as this.

Homer Carter, superintendent, Pepperell Mfg. Co., Opelika, Ala., was asked for his experience, and said that, "we had the old low pressure system, applied in the hopper, and had that same trouble of not getting an even distribution of the oil. We discarded it, and recently put in the high pressure system, applying the oil just after the cotton leaves the bale breaker. The advantage we find is that it minimizes the amount of fly in the card room." He explained, answering Mr. Rogers, that his pump is connected to the drive of the bale breaker; that the oil distributes as long as the bale breaker is in operation.

A member asked Mr. Towers as to whether he applies the oil at right angles to the flow of cotton, or in the direction of the flow. Mr. Towers replied that the nozzle applies the oil at a slight angle, so that it hits the opposite side of the pipe about 15 inches away, across the flow of the cotton.

"Do your picker screens load up or gum up?" asked J. A. Bone, overseer of carding, Lanett Mill. Again Mr. Towers replied that such trouble would not be experienced provided a sufficiently small percentage of oil was used.

Mr. Jones of Sibley asked here as to the effect of spraying oil on the yarn numbers. Mr. Towers said that since spraying he had found it necessary to lighten one tooth on his drawing draft gear. George S. Elliott, superintendent, Pacolet Mfg. Co., New Holland, said he had noted little if any difference in this connection since spraying. Mr. Rogers stated that in a recent discussion on the subject, he had raised the point as to whether this was due to the fact that the fibers lay closer together or that more stock stayed in the yarn, and suggested that some thought be applied to this.

J. W. Hames, of Exposition, pointed out that "a recent test that we ran on the oiled and un-oiled stock, showed that in the spinning the numbers were 1½ per cent heavier on the oiled stock than on the un-oiled yarn." Mr. Hames' report on the question follows:

"We have tried the oil spraying system, and are still using it. We like it very much, especially on low grade and re-worked stock. Our recent tests show that there is less fly in the stock with oil. The test follows:

WASTE

MACHINE	With Oil	No Oil
Horizontal Beater	3.00%	2.67%
Vertical Opener	1.00	1.33
Breaker Picker	.33	.33
Inter. Picker	.50	.33
Finisher Picker	.33	.17
Droppings from Cards	.84	1.17
Strips from Cards	4.17	3.33
Invisible Waste	4.83	7.50
TOTAL	15.00%	16.83%

"We found practically no difference in the breaking strength of the yarn, but the stock treated with oil was 1½ per cent heavier than the untreated stock. This heaviness was also noted in the weight of the sliver as it left the card."

Requirements of Oil.

At this point, Mr. Towers was asked what kind of oil he is using, and it was explained that the organization rules prevent the use of trade names. He said, however, "you must be sure to use an oil that meets the requirements, one of which is that it will emulsify in water. I have heard of mills which tried the use of cotton-seed oil, but cotton-seed oil will not emulsify, it will gum and harden and will not oxidize." Mr. Hames reported that he makes regular tests with water to determine if his oil is emulsifiable. Someone asked the effect of the oil on twist; Mr. Rogers replying that he had noticed no difference. This concluded the discussion on the subject.

Regulating Weight of Picker Laps.

The second question read as follows: "We would like to have a general discussion of correcting the weight of laps, by regain indicators, moisture controls, etc. What results as to uniformity of numbers?"

George S. Elliott, superintendent, Pacolet Mfg. Co., reported that they use no regain indicator or control method, explaining that their local conditions were such that the air came into the picker room from the card room, which was humidified, and that extensive tests had shown their regain in the picker room to stay between 5½ and 7 per cent, and he felt that the ordinary practice of setting back laps weighing outside the usual tolerance limits was sufficient under the circumstances. He stated, however, in answer to Mr. Rogers, that if this supply of card room air were cut off, he would have considerably more variation in his picker room.

"We control and humidify," reported Mr. Rogers. "We do not regulate the laps by the regain indicator, but hold our humidity at a constant regain of 7½ per cent."

J. A. Bone, overseer of carding, Lanett Mill, next reported, stating that they use the Aldrich regain indicator, and giving about the same information on the subject as he reported at the Montgomery meeting, the report of which will be found on page 618 of this issue. "We get very good results," said Mr. Bone. "Since we have been using it, we find our numbers run evener, and we have less variation. I as carder have less changing of draft gears. I used to change once or twice a day, but in the five months we have been using this instrument, I think I've changed only twice. Our beam weights, which used to vary as much as 18 pounds, now never go over 7 or 8 and seldom more than 3 or 4 pounds."

J. C. Edwards, superintendent, Martha Mill, was another who said he is using this method, and explained its operation. (This is the system which was described in the August, 1929, issue of COTTON. A copy of this story will be sent to those requesting it.) Briefly, the instrument is a form of scale. On the beam of the scale is placed a piece of cotton of predetermined weight, say 200 grains bone dry, and the scale or instrument is so calibrated that even a slight change in the moisture content of this piece of cotton is indicated by the scale pointer on a quadrant dial. A similar quadrant is placed on the picker lap scale. The weight of the lap when it carries the desired regain is determined, and the instrument set so that, with this desired amount of moisture in the cotton on the scale, the pointer will move to the desired Figure, say 6, on the quadrant. The picker tender is instructed to weigh the finisher laps to the figure on the picker scale quadrant corresponding to that indicated by the pointer on the regain instrument. In this way, correction is made for a variation of the relative amount of cotton and moisture in the lap.

D. D. TOWERS, superintendent of the Anchor Duck Mills, Rome, Ga., who conducted the spinning discussion session at the meeting in Atlanta.

Contrary to Mr. Elliott's experience, Mr. Edwards said he had seen the regain in the picker room jump from 5 to 8½ per cent suddenly; and that this system enables him to correct for the increased amount of moisture and the consequent decrease in amount of actual cotton occasioned by such a change in the regain condition. A question was asked as to what happened when these laps got into the card room. A. E. Massey, general superintendent, Thomaston Cotton Mills, Thomaston, explained that the weight of the roving is likewise corrected; Mr. Edwards adding that he makes four laboratory checks a day on this.

There were some inquiries here as to whether the 200-grain sample of cotton used in the indicator would remain accurate and sensitive. Mr. Edwards explained that checks in the laboratory on the moisture content of this against the actual moisture in a sample of the lap had verified its accuracy. He said they change the cotton element in the indicator once a

month, R. A. Butler, technical superintendent, reporting that after that length of time and exposure, it might lose its sensitiveness.

V. J. Thompson, superintendent, Manchester Cotton Mills, reported satisfactory experience with this method. H. S. Busby, director, textile school, Georgia Tech, pointed out the probability of instrumental error in equipment of this kind, and indicated it as his opinion that the hygrometric or general atmospheric control method is more accurate.

Mr. Bone told of a recent discussion concerning the advisability of stacking laps or roving and the probability of their losing weight. He said he had saved some laps for a month, keeping them in the same temperature and room condition, and found that they checked very closely with day-old laps, though he knew the indicator had shown a number of fluctuations in the meantime. He said that after a month he has taken the cotton element from the indicator and checked it in the laboratory against the cotton in the lap, and found them very close together.

Mr. Hames made further inquiries concerning Mr. Rogers' method of control in the picker room. This room is one in which there is no dust room connection, the air being re-circulated in each picker. Mr. Rogers explained, in answer to a question, that he keeps the regain up to 7½ per cent, but that he has no means of de-humidification. However, he said, "we notice that the humidifiers run when it is raining so we still have to supply some moisture."

In answer to a question from A. E. Massey, Mr. Rogers said he had not as yet run this method on new-crop cotton.

Picker Grid Settings and Waste.

The next question was, "Discuss picker drafts and grid settings with relation to waste on cards. That is, what is your experience by closing up the grids, and doing most of the cleaning on the cards? What percentage of total waste, if any, has been saved using this method, and what effect does the heavy cleaning have on cards? What special settings on cards, if any, have been used?"

J. C. Edwards stated he had submitted this question because tests had shown that when closing up the picker grid bars, he had gotten about the same total waste through the cards; and he wanted the consensus of opinion as to where the cleaning should be done. Mr. Rogers said, "it has been my observation in the last few years that everybody has attempted to take more out in the opening and picking, and less in the carding." A show of hands in response to a question from him indicated that it had been general practice within the past few years to increase the amount of opening and cleaning equipment.

H. T. Woodyard of LaFayette, reported getting out about 6 per cent in the picker room, and 2½ per cent on the cards, closing up the grids. Responding to Mr. Jones, he said he sets his grid bars ¼-inch at the top and gradually closes them to a point where they will not rub.

V. J. Thompson, superintendent, Manchester Cotton Mills, reported the following waste percentages, starting with 1,629 pounds—three bales—of cotton:

Bagging and ties	4.97%
First Vertical Opener	1.47
First Centrif-Air	.74
Second Centrif-Air	.64
Murray cleaner	.31
Breaker Picker (double beater)	.74
Finisher Picker	.69
Invisible	.55
TOTAL through Pickers	10.11
Card Strips	1.70
Fly	1.52
	13.33

Mr. Thompson said this was a test on three bales of ⅞-inch, one bale Strict Low, one Middling, and one Strict Middling. He cards 22 pounds per hour, with standard flat speeds, strips with roll three times a day. On his Buckley beater, the setting of the feed roll to the beater is ⅛-inch, and, on the Kirschner beater, ¼-inch. All grids are set 5/16-inch at front, going gradually to ¾-inch at the bottom.

Mr. Thompson reported that his card strips run very close to the figures given regularly; he sets as close as possible without rubbing, and sells his strips for not better than No. 2. He said he has grid bars in his vertical opener, and does not use oil on his cotton. D. D. Towers said his strips run between 2.10

J. W. Hames, past general chairman, and Frank K. Petrea, vice general chairman.

and 2.25, and Mr. Rogers reported about 4.00 per cent, explaining that they re-work their strips.

Mr. Rogers interpreted the question to mean whether any spinnable stock could be saved by closing up in the picker room, and putting the burden on the cards, and the inquirer, Mr. Edwards, said this was the correct interpretation. Mr. Thompson said, "the reason we take it out as much as possible in the picker room is we have to card too heavy, and we try to do all we can to take work off of the cards."

R. S. Steele said that it has been his experience that it is better to do all cleaning possible in the opening and picking, even though he does not card heavily. Tests mentioned by H. S. Busby as to the percentage of staple left in cotton after cleaning likewise indicated that the earlier the cleaning is done, the better. Mr. Busby referred to two methods of sorting fibers in cotton, to determine the percentage of each fiber length in a sample. He said that a method requiring about five hours could be secured for about $75.00; but for $400.00, an equipment to do this in about twenty minutes could be secured.

In connection with this discussion, G. S. Jones said

that once "I had an idea I was not getting enough cleaning on the finisher, and experimented with several different settings. When I closed the setting I got more fine trash from the finisher picker, but I seemed to get more short lint in the card fly." He said he likes a setting of ¼-inch at the top and ¾-inch at the bottom, very close between the bars."

There was some discussion on fan speeds, and Mr. Rogers declared this to be a point well worth experimentation. In this connection, Mr. Elliott said that of course conditions vary, depending upon the lay-out, but suggested that any man might try an experiment on fan speed by holding a piece of cotton about three inches from the grid bars. He said if it is sucked in, the fan speed can be cut down.

The next question asked for experiences with metallic card clothing. Only one mill man reported, briefly, stating that he has found a reduction in the stripping, as he strips the one card he has so equipped only once a week, with a vacuum stripper. Director Busby of the textile school reported an installation which had been run mostly on ⅝-inch to ¾-inch cotton. He said they had been able to card this on the metallic clothing whereas it was not possible with the regular wire clothing. He said the settings were practically the same as those used with the regular clothing.

Straight Wire Clothing for Cards.

The next subject was the use of straight wire clothing on cards, and there was an extended discussion on this. The secretary first read a report submitted by an absent member, as follows:

In our experience with straight wire card clothing, we find no difference in the running of the frames, or spinning quality, or breaking strength of the yarn, but there are several other points which must be considered. These may be listed as advantageous and disadvantageous, as follows:

"Under the head of advantageous features, we find that the straight wire eliminates 80 per cent of the time lost by stripping; it eliminates 85 per cent of the cylinder and doffer strips, and 50 per cent of the time lost by grinding. There is increased production and decreased waste, and a slightly decreased labor cost.

"As to the disadvantageous features, these are: cylinder and doffer strips lowered in grade. Flat strips a little heavier. More fly, making the cards harder to keep clean. Bruised clothing is much harder to straighten up; we are unable to straighten in some cases where regular clothing could have been repaired."

V. E. McDowell of the Eagle & Phenix Mills reported next, stating they have put straight wire clothing on 19 cards. "We have saved in the cost of stripping and grinding. On the cards, we found that the sliver became heavier, and we had to cut down on the draft gears; the evenness of the roving was improved. We ran three ends from each card through on the same head of drawing. The work was evener all the way through, until we got to the speeder, where we could tell very little difference. I noticed more fly around the cards and drawings. We have the straight wire on the cylinder and doffer, and strip it once a week. We have encountered no trouble in stripping it. We strip with an old-style roll when we strip."

LONG DRAFT spinning, revolving top clearers, cork rolls, construction of spinning bands, large package spinning, individual and group drive—

These were some of the subjects discussed in the session on the spinning room, at this meeting.

D. D. Quillian suggested that one of the manufacturers of equipment can provide a special fillet with a little hook in the wire that gets down to the foundation, in stripping the straight wire.

Mr. Maddox, overseer of carding at Fulton Bag & Cotton Mills, said he had run one card on straight wire for a week without stripping, and experienced unusual difficulty in stripping it. He said he had to put the roller on seven or eight times, and finally he went back to stripping this card three times a week with the vacuum stripper as he does the rest of his cards. Mr. McDowell said they had some trouble to begin with, on some clothing in which the wire had been put into the clothing in the wrong way, but that this was remedied.

H. T. Woodyard of LaFayette said he has seven cards out of 48 equipped with straight wire. These run night and day and he strips every Friday afternoon with a vacuum stripper. He said he has less cloudy work. Further, he said, in damp weather he used to have a lot of loading up, but does not experience this trouble on the straight wire. He runs 1 1/16-inch cotton. He cards around 85 to 90 pounds a day, and grinds the straight wire every 16 days, night and day run.

R. J. Jennings, assistant superintendent, Lanett Mill, was asked to report, and said, "We put on six cards and made some very extensive tests, and although the card sliver was heavier, the roving was practically the same. We had fly all of the way through. By the time we made yarn from the card with the straight wire and from the regular wire, there was very little difference." Mr. Jennings submitted the following

Size and Waste Test on Regular Wire Versus Straight Wire.

"This test was run on four cards clothed with straight wire and four cards clothed with regular wire clothing. The sliver from the straight wire cards and from the regular wire cards were run through the same drawing frame, the same slubber and the same speeder at the same time. After the speeder bobbins were sized they were carried to the spinning room and were run through the same spinning frame at the same time. The bobbins off of the spinning frame were sized and broken. The average sizings were:

	Straight Wire	Regular Wire
Cards	61.8-grain	60.7-grain
Drawing	67.6-grain	68.4-grain
Slubber	1.74-hank	1.72-hank
Spinning	12.44s	12.33s
	(147 lbs. break)	(150.7 lb.break)

"A waste test was run on the straight wire versus regular wire, for 55 hours, on four cards of each. The weights were as follows:

	Straight Wire	Regular Wire
Weight of laps	4119.75 lbs.	4064.75 lbs.
Weight of sliver	3971.50 lbs.	3912.50 lbs.
Weight of cylinder strips	1.75 lbs. (stripped 1 time)	20.25 lbs. (stripped 13 times)
Weight of flat strips	69.00 lbs.	69.25 lbs.
Weight of flyings	47.25 lbs.	37.00 lbs.
Weight of invisible loss	30.25 lbs.	25.75 lbs.
TOTAL weight of waste	148.25 lbs.	152.25 lbs.

The percentages of the various wastes were:

	Straight Wire	Regular Wire
Per cent of cylinder strips	.0004	.49
Per cent of flat strips	1.67	1.70
Per cent of flyings	1.14	.91
Per cent of invisible loss	.73	.63
TOTAL per cent of waste	3.5404	3.73

"We then figured the value of the waste, figuring strips at 13.61 cents per pound; flyings at 4.00 cents a pound; and invisible loss at 3.00 cents a pound, the price of card room sweeps. The values were as follows:

	Straight Wire	Regular Wire
Value of cylinder strips	$ .23	$2.75
Value of flat strips	9.39	9.42
Value of flyings	1.89	1.48
Value of invisible loss	.90	.77
TOTAL value of waste	$12.41	$14.42

"Figuring in the cost of waste and the cost of putting on the straight wire," Mr. Jennings concluded, "we find that there is an additional cost of 40 cents per week a card on the straight wire."

Mr. Jones asked if anyone had run any of the yarn through into cloth for comparison. Mr. Hames said while he had not made the cloth, "I did run it through into yarn and black-boarded it, and showed the blackboard to a number of people not familiar with the two yarns, and every time they picked out the yarn from the regular wire as being a better grade of yarn, freer from neps and smoother." Mr. Hames submitted the following additional information:

"We have found that the stock carded with straight wire card clothing shows more neps in the sliver, roving and yarn. This is also true of the flat strips. We find there is slightly more trash in the strips from the straight wire. The following are figures from our test as to waste:

WASTE FIGURES.

	Straight Wire	Regular Wire
Droppings from card	1.12%	.56%
Strips from card	4.47%	3.91%
Invisible Waste	.56%	.56%
TOTAL	6.15%	5.03%

"The yarn from the stock which was carded on the regular knee wire was 2.09 per cent heavier than the stock carded on the straight wire."

Card Draft and Doffer Speeds.

"The next question asked: "What draft do you use on your cards? Give the weight of lap. Have you ever gone higher or lower, and if so, with what results?"

Most of those responding indicated drafts of around 100. C. R. Brumby, superintendent, Cedartown Cotton & Export Co., Cedartown, said he had put 52 cards on 120 draft, and was getting good results. "We have found an improvement in the evenness since we increased the draft." He said he lightened the sliver down to 60 grains, and slowed down the card, and made a 13-ounce lap instead of a 14-ounce lap.

Mr. Rogers asked Mr. Towers to tell of some experiments with regard to doffer speeds, pointing out that "there is a certain range of speeds below and above which you will decrease the breaking strength." Mr. Towers explained that when he was located in Texas, a number of mills had made experiments on 15/16-inch to 1 1/16-inch cotton, "and it developed that the maximum strength was secured with between 8 and 9 revolutions per minute on a regular 27-inch doffer, regardless of the weight of sliver. Below and above that was a decrease in strength. There is a point in there where your doffer speed (the cylinder making the standard speed) will give the best strength."

Mr. Towers said, regarding card drafts, that he did not believe 10 points up or down would make any difference. A. E. Massey reported that between 112 and 120 there was practically no difference, and W. D. Massey, his overseer of carding, added that in these experiments their doffer speed remained at 8½ turns.

A member asked for experiences with changing the speed of the card cylinder. Mr. Towers said he had tried 173 r.p.m. with no difference in result; and Mr. Rogers said he had seen cylinders run from 155 to 170 r.p.m. with no difference in result. In each case the doffer speed was carried up in proportion.

Mr. Rogers said he had also seen a licker-in speed almost doubled with not very much better cleaning.

The next question was, "Where flat chains are badly worn, the usual method is to take out a couple of flats on each card, shortening the chain in this manner. Have you run into trouble in taking out flats and, later on, when new chains had to be bought, found the periphery or grinding circle changed where flats had been taken out to shorten the chain? Which is the better method—to buy new chains or take out flats?"

G. S. Jones said that he had never considered it advisable to run, carding heavy, with old chains and flats taken out. "It was brought out in a discussion last night that chains will not wear evenly on both sides, and consequently you have the flats on the worn side pulling at a sort of an angle, but of course they would be pulling at an angle before you took them out," said Mr. Rogers.

It was suggested in grinding flats in such condition that the roll be set with the flats.

Mr. Rogers suggested the idea of changing chains when the flats are re-clothed, and those present seemed to advocate this, when possible. V. E. McDowell ex-

plained a method of increasing the pitch on the sprockets to take up slack in the chain, and it developed that the type of sprocket he described is being furnished now with cards. Two of the men asked about trouble with the ends of flats wearing thinner, where the flat sides over the arch, on one side than the other. It was stated that some clothers have a special grinder to take care of work of this sort.

Card Stripping Systems.

The next question called for discussion of card stripping systems. V. J. Thompson of Manchester indicated that he had abandoned the vacuum type for the brush, declaring that he could not get the former to do satisfactory work, particularly on the doffers. He had the double system, with a 3-inch pipe, and 26 pounds of vacuum. He said he could not get it to strip where there would be oil from the comb boxes at the edges. G. S. Jones said he had been using a vacuum system for ten years, but had never been able to make it do all of the work, and Mr. Rogers pointed out that it is generally recognized as necessary to use a brush in addition to the vacuum a certain number of times during the week.

The overseer of carding from Chicopee Mfg. Corp. stated they have 20 cards equipped with the Belger continuous stripper. He said the card looks all the time as though it had been stripped for 30 to 40 minutes; that there is a little more trash in the sliver, less top flat strips. The droppings underneath the card are about the same, he said, and the sliver is a little bit heavier.

Revolving Clearers on Drawing.

"Have you found the revolving clearer on drawing better than the stationary type?"—the next question —was discussed briefly. The gentleman from Chicopee stated they have the revolving top clearer on drawing in conjunction with cork rolls on drawing, and have no trouble. Mr. Rogers asked if the felt is expensive, and Walter B. Dillard, Jr., Peerless Cotton Mills, replied in the affirmative. Mr. Dillard added that the selvages of the felts get oily and must be replaced frequently; that the felt usually used for clearer cloth could not be used here because of its tendency to stretch. He said they had not yet attempted to clean these felts, but planned to do so later. J. C. Platt, agent, Aragon Mills, reported the use of felt in revolving top clearers on drawing for four years without replacement.

Spiral Gears and Chain Drive on Roving Frames.

It was necessary to curtail the carding discussion because of lack of time. The final question presented asked for experience with spiral gear drive on drawing and roving frames. Mr. Haire, of Piedmont Cotton Mills, said he had tried the spiral gear in the roving frame horse-head, and likes it, as it takes out a lot of back-lash and makes the frames run much steadier. J. C. Lanham, of the Standard Cotton Mills, said he had about three years' experience with spiral helical gears on roving frames, and was pleased with them.

Mr. Rogers asked for experiences with the new chain drive compound for roving frames. Homer Carter, of Opelika, said they have one frame so equipped, and would like to have it on all of the frames. He said it gives smoothness of running with less vibration. Mr. Lanham of Cedartown likewise reported satisfactory experience with it. G. S. Jones said he had applied it on a 1911 model intermediate on which he had not been able to keep a swinging gear and horse-head gear. "We put that chain drive from the jack shaft to the back bobbin shaft, and I haven't had a gear broken in two years. Another man also said it reduced breakage. No one present had tried the spiral gear on drawing, though several indicated their intention of doing so.

The Spinning Discussion

A questionnaire of spinning questions formed the basis of the afternoon session, which followed the usual Dutch luncheon. At the luncheon, Walter C. Taylor spoke briefly concerning The Arkwrights, Inc., of which he is secretary. In a brief business session, E. H. Rogers was elected as a member of the executive committee for 2½ years, to succeed himself, his previous term having expired.

The spinning discussion was conducted by D. D. Towers, superintendent, Anchor Duck Mills, Rome, Ga. The first question asked for a discussion of the revolving top clearer versus the stationary type on spinning.

Revolving Top Clearers in Spinning.

R. L. Zachry, assistant superintendent, Fulton Bag & Cotton Mills, reported first on this, stating that, "we have some revolving top clearers we are using on osnaburg spinning, with cork rolls, and we like them very well. We also have the bunchless cleaners. We find there is so much less clearer picking to do on this waste work, and where we have the bunchless cleaner and the cork roll." He described the bunchless cleaner as a cleaner which travels on an overhead track and has a fan which blows down.

Mr. Towers asked if the top clearer revolved only on the front roll, and if so what was used on the back rolls. Mr. Zachry explained that the revolving clearer works only in front; that the bunchless cleaner takes care of the rest.

Contrary to his experience on the osnaburg stock with the cork roll lay-out, Mr. Zachry said they had revolving top clearers on some leather rolls that were roughening up the cots and causing the life of the rolls to be shortened. He explained, though, that on this work a heavier clearer is used, with a heavier rod and a heavier wood, and that he felt this was largely responsible for the difficulty. He later stated that where on the long draft leather rolls, there were six ends to the cap bar and the clearer weighed 24½ ounces, on the osnaburg with the cork roll, the clearer weighed 17 ounces and covered eight spindles.

As to the clearers on osnaburgs, Mr. Towers asked Mr. Zachry how often he picks them, and Mr. Zachry said once a week, whereas with regular stationary clearers it would be necessary to pick about six times a day on this work. J. W. Hames reported that on part of his spinning, he has revolving clearers, and

(*Continued on page* 684.)

Montgomery Meeting Covers Carding *and* Spinning

THE CROWD in Alabama, Mississippi and Louisiana started the year's discussion meetings in the South with this meeting at Montgomery. Oil spraying, moisture content in laps, licker-in speeds, straight wire clothing, doffer speeds, drawing roll speeds, feed plate settings, break draft on fly frames, conditioning filling, sloughy filling, filling wind for warp, break draft in spinning, cork rolls in carding and spinning, roving bobbin cleaning machines —these are some of the subjects which were covered by practical men, whose ideas are accurately reported in the accompanying story.

A LARGE AND VARIED NUMBER of practical subjects relating to carding and spinning constituted the program of a meeting held in Montgomery, Ala., on Friday, February 28th, by the Alabama - Mississippi - Louisiana Division of the Southern Texile Association. Superintendents and department heads representing mills in the states named were in attendance and participated in the discussion. D. S. Cook, agent, Pepperell Manufacturing Co., Opelika, Ala., presided as chairman of the division; and R. J. Jennings, assistant superintendent, Lanett Mill Division of West Point Mfg. Co., conducted the morning session on carding with W. C. Ryckman, superintendent, Lane Cotton Mills, New Orleans, La., leading the spinning discussion in the afternoon.

The Discussion on Carding

After the preliminaries of opening, Mr. Cook turned the meeting over to R. J. Jennings, who began the discussion of the carding subjects, based upon a prepared questionnaire. The first question called for discussion on experiences with spraying oil on cotton preparatory to carding, and the question read: "State your experience with oil spraying on cotton, and for what particular reason do you use it?"

Spraying Oil on Raw Cotton.

W. C. Ryckman, and Robert B. Horsley, superintendent, West Boylston Mfg. Co., Montgomery, Ala., when called upon, both reported that their experience with the oil spraying method had been several years ago; that at the time it had not been successful, due mainly to the mode of application, which did not permit the oil to be distributed equably throughout the cotton. They both stated, however, that their understanding was that since that time the method and principle of application had been changed to a more successful method, and that they had been told a number of mills were using the idea with satisfactory results.

Mr. Cook, agent at Opelika, gave a more thorough report on the matter. He said that his original experience was similar to the others reported; that to begin with he was not able to get a proper distribution of the oil. "Later on," he said, "we found a system that did atomize the oil and spray it on, and so we made another installation and since that time we find that has been very satisfactory. This is on short 7/8-inch cotton, for coarse warp. We find that it reduces the lint in carding and spinning, and I think our overseer of carding, Mr. Williams, and our overseer of spinning, Mr. Davis, who are here, will bear me out in this.

"I have heard some discussion that the oil adds a certain amount of weight to the cotton, meaning that you get that additional weight in oil and not in cotton," Mr. Cook continued, "and that consequently you have to lighten your work. We have not had it in sufficiently long to test this, but we are satisfied with it even if we did not get any extra weight. Our experience has been so satisfactory that we are satisfied with it from the standpoint of the reduction in lint and the good running qualities of this short cotton. By the next meeting I hope we will have some definite figures to give you." Answering a question from Mr. Ryckman, Mr. Cook said that his work is white, not dyed, and asked his overseer of carding, Mr. Williams, to speak on the subject. Mr. Williams said the system had been put in about a year ago, and that so far as the cleaning on the card was concerned, he could tell no difference; that it does reduce the lint. "Some months ago," he said, "our oil gave out, and we could certainly tell the difference in the dust in the room."

Mr. Ryckman asked about the effect on breaking strength. Mr. Cook replied, "We didn't notice any difference. As stated, we have not made sufficient tests to get any definite figures on breaking strength or the effect on the numbers. I was just speaking from the standpoint of cleanliness and the better running qualities of the work.

Joe Jennings, assistant superintendent, Fairfax Mill, reported their experience had shown that with the oil there are fewer ends down. Mr. Cook said in this regard that they had changed spinning, at about the same time, and had no basis for determining the effect along this line. Answering Mr. Ryckman, Mr. Davis, overseer of spinning at Pepperell, said they could tell no difference in the amount of droppings on the thread boards in spinning, since using the oil.

No Experience on One-Process Picking.

The next question slated for discussion called for experience with the one-process type of picker. No mill man present, however, indicated experience with it, and Edwin Howard, representative of a manufacturer of this equipment, was called upon. Mr. How-

ard stated briefly that their experience with the system had shown it as practical to retain the evenness of lap to within ¼-ounce to the yard either way; that the mills in which the picker had been installed all reported favorably upon it. After his statement, the chairman went along to the next question, which read:

"In making a 13-ounce lap 50 yards long on a finisher picker in seven minutes, would you get clearer and better laps by making the lap in 10 or 12 minutes?"

D. S. COOK, agent, Pepperell Mfg. Co., Opelika, Ala., chairman of the Ala.-Miss.-La. Division, in charge of the meeting at Montgomery.

G. W. Lehman, overseer of carding, Merrimack Mfg. Co., Huntsville, Ala., expressed the opinion that to change "would make a better lap as it would have a tendency to throw the cotton on the screens more regularly." J. A. Bone, overseer of carding, Lanett Mill, said, "it depends on the speed. I would think that the beater speeds and drafts would have a great deal to do with it. You get a lot of fine dust on the cages, but if you cut the speed of the fans and beater, I do not know what effect it would have. If you got the speeds up I think you would have more cleaning."

"I imagine this question refers entirely to a uniform speed. If you are getting a 13-ounce lap 50 yards long in seven minutes, if you increased the speed of the lap you do not change any other speeds. It is simply a question of increasing the knock-off just enough," said Mr. Ryckman.

"I should think you would get a better lap in eleven minutes than you got in seven," responded C. P. Tisdale, overseer of carding, West Boylston Mfg. Co., when called upon.

Correcting Lap Weights for Moisture.

"What method do you use in correcting the weight of laps, and what results do you obtain as to the accurateness of your numbers?" was the next question put up for discussion by Mr. Jennings.

J. A. Bone, overseer of carding at Lanett, reported in answer to this question that he has the Aldrich method of indicating moisture content, and has been using it for the last three or four months, and "we find that we get much evener numbers, and that we have less variation in our beam weights. The work is evener and we have less laps to set back." Asked to describe the method referred to, Mr. Bone explained that it is an indicator which shows on a quadrant the percentage of regain existing in a piece of loose cotton that is hung on one end of a calibrated scale located in the picker room. To correspond to the quadrant on which variations in the amount of moisture in this sample of cotton are indicated, there is a similar quadrant placed over a portion of the dial of the picker lap scale. Mr. Bone pointed out that the regain in the piece of cotton will represent practically the regain in the lap in process. If the pointer on the instrument points to 7, the picker hand is instructed to weigh laps to within the allowed variations of 7 on the quadrant on the picker scale. Thus, he explained, the lap weight is adjusted to allow for moisture variation as it is indicated in the weight of the piece of cotton on the instrument. (A complete description of this instrument was published in the August, 1929, issue of COTTON, and copies of it will be furnished to those requesting them.)

As to further experiences, in securing even picker lap weights, G. W. Lehman reported that at Merrimack they have no way except to open the cotton up well in a good warehouse which they have. J. T. Phillips, superintendent, Buck Creek Cotton Mills, Siluria, Ala., reported the use of humidifiers in the picker room.

"We use a hygrometer to determine the relative humidity in the picker room," reported Robert B. Horsley, of West Boylston, "and we have a chart that shows the weight of the lap, actual cotton plus moisture content, at the different relative humidities, and we have found this to be fairly satisfactory."

J. M. Glass, overseer of carding, Shawmut Mill, said, "we have the same thing that Mr. Horsley has. We read our hygrometers every hour, and if the lap changes as much as two ounces, we change our scales. We hardly ever have to change a draft gear now to hold our weights."

Left, W. C. Ryckman, who conducted the afternoon spinning discussion; right, R. J. Jennings, who led the carding discussion in the morning.

Mr. Rowell, of the Saratoga-Victory Mills at Albertville, Ala., said they try to hold the relative humidity in the picker room to around 40 to 45 per cent; and that in doing so they have little difficulty in holding their numbers.

Referring back to the method he described, Mr. Bone said that he could start up a picker room that had been shut down, and take the reading of the instrument after about thirty minutes and check it against the actual regain in the cotton in process and it would not be off more than ½ of one per cent.

Mr. Ryckman of New Orleans said he had installed one of these indicating instruments, but that he also has complete humidification in the picker room which renders the instrument useless except for the purposes of observation. He said he strives to secure seven per cent regain with humidifiers in the picker room. Mr. Bone replied to a question by saying he uses no humidification in the picker room in conjunction with

his instrument. He expressed the opinion that it is best "to clean the cotton as dry as possible".

Changing the Speed of Licker-In.

"On your class of work, what licker-in speed have you found will give you the best results, as far as cleanliness is concerned? Where the licker-in speed has been increased what effect has it had on the breaking strength of the yarn?" This was the next question presented by the chairman. It had been submitted by Mr. Cook.

In explaining the question, Mr. Cook said, "Our speed was too slow. We are on white work, short staple, 13½s to 22s warp, and we had a licker-in speed of 406 r.p.m., which was too slow. We jumped it up to 500 revolutions, and we have not completed our tests, and that is the reason I asked the question. In the droppings under the licker-in we notice considerably less of the long fly and more of the short stuff, and we have some cleaner web on the front and get cleaner work. Our tests to determine whether or not there is any increase or decrease in breaking strength are not complete, but I know of one man who has tried this change, and he got the same results as to fly and droppings and cleaner cloth, and he also tells us that absolutely there is no effect on the breaking strength at 500 revolutions."

J. A. Bone.

J. R. Federline, Jr.

Asked concerning other changes, Mr. Williams, overseer of carding at Mr. Cook's mill, reported that there was no change made except in the speed of the licker-in.

Horley Davis of the Sunset Textile Mills reported here that they had changed the licker-in speed in an effort to get a cleaner sliver, and that they too got less long fibers and more short fibers out, but that at the same time he had changed several other speeds and some settings.

Mr. Bowles, overseer of carding at Fairfax, said they run a licker-in speed of 445 r.p.m., but that to better strength they had changed the feed plate setting from a 10 to a 15.

"The settings and the condition of the wire have everything to do with the cleanliness of the work," said J. A. Bone. "Your speeds figure in, too, but to change the speed a few revolutions if you do not have the other conditions right is not going to help much."

"We have made no change in the speed of the licker-in," said Mr. Ryckman, "but I have listened here to one man who changed from 400 to 500 r.p.m., and got considerable difference in the droppings, and another man said the same thing. In my opinion, no matter what speed you change to, if your feed plate setting is different from the other fellow's your results will be different. To my mind the setting of the feed plate has more to do with the cleanliness than a change of a few revolutions of your licker-in speed."

Here J. A. Bone told of an interesting experience. He said that once he found one card on which the mote knife brackets were broken, and that this card was taking out more motes and loose fiber than any card on the line. He said he had a visitor from another mill, and showed him the droppings from this card, and was told that the mote knife settings on this card were correct then he explained the situation to the man, told him that there were no mote knives at all working on that card! He added, however, that he did not change the rest of his cards to operate on this basis.

Experiences With Straight Wire Clothing.

"What has been your experience with straight tooth card clothing?" was the next question, which developed several reports on this new type of clothing which does not have a knee in the wire. G. W. Lehman, overseer of carding at Merrimack, was the first to respond.

"We have one card," he said, "and we tested it and kept the weight of it and carried it through and broke it and weighed the waste. We found that the straight tooth card clothing did not give us as good results as the regular card clothing. The yarn was a little weaker. We are making 29s and 30s, and it would break two pounds less and was a lot dirtier."

"We made several tests covering a period of eight months on four cards," reported J. L. Bowles, overseer of carding at Fairfax. "The only advantage we could find was in less stripping and less grinding. We card 140 pounds a week and stripped them once a week, and did not have to grind but every several weeks."

"We tried six cards," reported R. J. Jennings, "and ran some very extensive tests, and we found that by stripping every 100 hours, as was recommended by the manufacturers, the cloth would show up dirty, but stripping every 40 or 50 hours we couldn't see any difference. It was stated by the manufacturers that you could increase the weight of the sliver, which means that you keep more short fibers in the sliver and that you would have to lighten up. We found that in weighing the sliver from the card it did weigh two to four grains heavier, and on the drawing and slubbers it still weighed heavier, but by the time we got the work to the speeders, it was practically the same weight as the regular work, showing that although we kept it in it dropped out. You can run a great deal longer without stripping and when you take the strippings out you do not have any waste at all, and this isn't worth much. As far as the breaking strength, evenness of the roving and yarn, etc., we could not see any difference."

A member inquired as to the reason less stripping and less grinding are necessary with this type of clothing, and it was explained that the wire is perfectly straight coming out of the foundation, and has no knee in it, as does regular wire, and therefore has no tendency to retain the waste and short fiber taken out of the cotton.

C. H. Cole, manager, Opp and Micolas Cotton Mills, Opp, Ala., was next called on. He said that his first cylinder was not as he had ordered, that there was a lot of variation in the surface after it had been put on, and it was later discovered that the wire came straight out from the foundation instead of being bent in the foundation. After making a change to the correct type, he said they could notice that the strips looked cleaner, and that they concluded the short fibers were going on further.

R. W. Jennings, superintendent, Lanett Mill, reported that considering the matter from the difference in the value of waste, etc., he had determined a difference of 50 cents per week per card additional cost in running the straight wire clothing.

Speeding Up the Doffer.

Frank G. North, of Atlanta, stated here that while he could not discuss the subject technically, he had recently visited a large mill which had complete equipment of straight wire card clothing, on several hundred cards, and seemed to be pleased with it.

G. W. Lehman here asked for discussion on metallic clothing, but no one present indicated experience with it.

The next question was, "Will speeding up the doffer without any other change on the card or the lap increase the breaking strength, and will the sliver be cleaner or contain more foreign matter?"

C. H. Cole.

V. W. Lovill.

"We speeded up from 11 to 14 r.p.m., on heavy work, trying to get out of a night line," said J. M. Glass of Shawmut, "and we could not tell any difference in the looks of the sliver, but when it came to the breaking strength, it showed a decrease of about six per cent."

"We increased our doffer speed, but could not tell any difference in the breaking strength or the cleaning," reported Mr. Speigner of Buck Creek Mills.

"I do not think it would be a good policy," said G. W. Lehman. "I do not believe it would make the sliver cleaner, and I believe that it would be injurious to the breaking strength."

What Is Light, Quick Carding?

The next question asked, "What is light, quick carding?" and C. P. Tisdale said his opinion is a light lap and a high doffer speed. Mr. Ryckman said that between heavy carding and fast speed, and heavy carding and slow speed, he could not tell any difference in the evenness of the work.

"Would you get better work if you lightened the lap, and let the card sliver remain the same weight, and speed up the card?" was next asked. "I should think not," replied Mr. Glass. "If you lighten the lap you must change the draft and get the sliver back to what it did weigh." Mr. Bone said, "I cannot see where you would get any benefit unless you changed the speed of the licker-in and cylinder. You might do that. But if you are making the same sliver and lighten the lap at the same speed you will beat the same number of fibers per minute." Mr. Nichols agreed that there would be no benefit to be derived from the change.

Setting of the Feed Plate to Licker-In.

"Which will give the greater breaking strength—a close or a wide setting of the feed plate to the licker-in?" was the next question.

Mr. Glass reported that he had tried three settings, from 12 to 29, and could tell no difference in this regard. "We set close," said G. W. Lehman, "because we feel like if you get too far away you will get bunches. We run 7/8-inch cotton."

With regard to Low Middling and Middling, 7/8 and 15/16-inch cotton, Mr. Ryckman said he had inquired of some machine makers on this point, and they had advised him that it was a matter of the staple of cotton; that long staple cotton permitted you to open up, whereas you close up on short staple. He said then that they gave a range of from 7 to 15, depending on the staple.

Joe Jennings reported that on 7/8-inch cotton for 15s, at Fairfax, they had changed from a 10 to a 15 and got a slightly better breaking strength.

The next question asked for experiences as to the best speed for the front roll on drawing. Mr. Bone and Mr. Jennings said that coming from 390 and 400 down to 300 had been a help, and Mr. Jennings read here a report in the Southern Textile Association Book of Proceedings from a man who said that by reducing from 360 to 230 r.p.m. he had noticed that the work on slubbers, and speeders, ran better. C. C. Cobb, superintendent, Geneva Cotton Mills, Geneva, Ala., said that whether a frame was old or new made a difference; he said he is running 300 r.p.m., and would like 275 better if he could use it and keep up. He explained that the higher the roll speed, the higher the rolls will jump, causing more cut drawing.

"We run 250 r.p.m.," said Odis E. Stevens, general manager, Saratoga-Victory Mills, "and I am thinking of cutting it to 225, and would like to know if this would give an improvement."

Mr. Ryckman said that such a change would not make any difference; that a difference of 25 r.p.m. would have no effect. He said he had made tests on speeds ranging from 385 to 192, and had found no difference in the evenness of the sliver.

J. A. Bone here asked for discussion on spiral gears on drawing, but no one indicated experience with them.

Break Draft on Fly Frames.

"How much break draft have you on slubbers, intermediates, and speeders? Will more break draft give you a more even yarn and greater breaking strength?" This was the next question.

Mr. Tisdale reported first, stating that he had experimented with 1.20, 1.26 and 1.41, on 23s, and a total draft of 4.25, on the slubbers. He said that, if anything, the 1.41 produced a lower break than any of the others.

"My idea about break draft is that the total draft will have something to do with it," declared Mr. Bone.

"The amount of stock will also affect it. I would think that the coarser the stock and the greater the draft, the more advisable it would be to have a greater break draft." Mr. Bone said there were several ideas as to just what the break draft is, but it was decided that reference was to the first draft affecting the roving or sliver, or the draft between the back and middle rolls.

Joe Jennings expressed the opinion that the amount of twist in the roving will have an effect on the break draft since, with the exception of the slubbers, the break draft must pull this twist out.

"If your total draft is very high, your break draft ought to be increased," said Mr. Ryckman. He showed that with a break draft of 1.10, and a total draft of 7.00, the other draft on the machine would be 5.90, whereas with a total draft of 4.00 the remaining draft would be 2.90. "Therefore," he said, "I should think that the break draft has to be determined not only by the twist, but also by the total draft you are using."

"Do you consider it wise for the card room to accumulate a stock of roving in excess of what the spinning room actually requires," was next asked. Mr. Glass, overseer of carding at Shawmut, declared that this was not wise, because "the more you handle the roving the worse it will run." John Hampton, overseer of spinning at Fairfax, said that he prefers to get his roving fresh from the card room. He said he allows only one layer of roving on top of the creels of the spinning frames, because this makes it easier to regulate the numbers. If it is stacked up, and a rainy spell comes along, he pointed out, it will make a difference in the weights.

J. L. Bowles.

J. M. Glass.

Accumulating Stocks of Roving in Card-Room.

Here Mr. Bone declared that since using the system of lap weight control he had described, that provided the bobbins were not stored in a different room under different humidity conditions, he had a much better control over this factor, and that there was less variation, even though the bobbins may be run up a week ahead.

J. L. Bowles, carder at Fairfax, explained that when a man is making ten or twelve different hank rovings, it is more difficult to prevent carrying some ahead.

"Sometimes you will get more variation from roving that stays on the spinning frames than in the card room," declared G. W. Lehman, overseer of carding at Merrimack. "I have seen spinning rooms where the roving was piled up on top of the creels, and some of it would stay there for three months before it was used. I think the spinners should have their creels cleaned off at least once a week. I like to carry just enough roving to be on the safe side."

Mr. Bone and Mr. Ryckman both agreed that excessive handling damages roving, and declared that it should be stacked properly and handled carefully. Mr. Ryckman said from his point of view he would prefer carrying just the right amount to keep the mill running properly; that if it is properly handled and properly stacked, from two to three days' production is not too much.

Solid or Shell Front Top Rolls.

The last question prepared on carding pertained to solid versus shell top front rolls on roving frames. Mr. Lehman expressed the opinion that the shell rolls align themselves better with the steel rolls and give a closer bite and a better friction. Mr. Lehman here asked for discussion of the chain drive compound on speeders.

Mr. Williams of Opelika declared that he has one installed on one frame, and likes it. It has given no trouble at all, he said, and "I think it is one of the best drives I have ever seen. The whole frame starts together, and there is less breakage."

Asked what he thought about it, Mr. Ryckman said he has this type of drive on about 20 frames, and "I think anybody who buys any other kind simply doesn't know what he is doing. We are now equipping all of our frames with it. It means a saving in the gearing—I imagine I save $25.00 a year on each frame. There is a big decrease in stoppages, and a reduction in the labor attached to keeping a frame up." He said there was no apparent difference in the amount of power used. "Our frames are good frames, and we have ball-bearing shell top rolls, and if I was going ahead further I would put in ball bearings on the main bearings. The chain drive makes them run much easier than with the old compound."

Mr. Williams here reported the use of spiral gears in the horse-head and carriage, stating that this eliminated a lot of break-downs. This concluded the morning discussion, and a "Dutch" luncheon was held at the Whitley Hotel, where the members were addressed by Judge Sanford, of the Alabama Court of Appeals.

The Discussion on Spinning

At the afternoon session, the discussion was devoted to spinning questions, under the leadership of W. C. Ryckman, superintendent, Lane Cotton Mills Co., New Orleans. Before starting the discussion, Mr. Ryckman paused to pay tribute to the memory of the late Oliver G. Murphy, first chairman of the division, who had passed away since the previous meeting at Birmingham.

Conditioning Filling to Prevent Kinking.

The first spinning question asked, "What is the best way to condition filling yarn to prevent kinking?"

D. S. Cook was the first to reply, stating, "if it was possible, I would prefer to condition filling by storing it and letting the twist set. I believe that ageing filling is the best way, but it is not always possible or economical to do this. Then if some quick method is required, probably the best is some sort of steaming machine where it can be put through quickly, or a con-

ditioning room where the air could be conditioned."

John Hampton, overseer of spinning, Fairfax Mill, was next called upon. He said that at Fairfax they do not have to condition the filling but on previous jobs he has seen it aged and also seen conditioning rooms, which are good. He referred also to sprinkling the filling, but did not recommend this method. He pointed out that in any method, it is necessary to take care not to damage the quills. Mr. Cook asked those not conditioning their filling how they get along without doing it. C. H. Cole replied that he uses friction in the shuttles, and also takes out some twist, He replied to a question from Mr. Ryckman by saying that he uses his filling yarn right off of the frame, without ageing, but that he uses a slack twist.

"We find that by taking the filling into a conditioning room we get good results," said Mr. Gunn. "We keep it in the room for about twelve hours with a temperature of 105 to 110 degrees and a relative humidity of 90 to 95 per cent. The room is heated by steam and the water is sprayed in through pipes." He said this temperature and humidity apparently prevented damage to the metal-bushel quills which he uses as he had no trouble along that line.

John Hampton.

J. L. Jennings.

Bobbin Diameter for 2-inch Ring.

"What diameter warp bobbin barrel is best when spinning 13s warp on a 2-inch ring and a 7-inch traverse?" was the next question.

One member reported that on a 1⅞-inch ring, 6½-inch traverse, 13s warp, filling wind, he uses a ¾-inch bobbin with cone at bottom, and gets a front roll speed of 155 r.p.m. Mr. Hampton said on a 2⅛-inch ring, he uses a ⅞-inch cone-shaped bobbin, for 14s, with a front roll speed of 160 r.p.m. J. R. Federline, Jr., overseer of spinning, Lanett Mill, reported just having changed from a ⅞-inch to a 15/16-inch bobbin on a 2¼-inch ring, 8-inch traverse, filling wind, on 14s, and that he gets less end breakage than with a ⅞-inch bobbin. On a 2-inch ring, he said, he uses a ¾-inch bobbin.

Bobbin to Prevent Kinking and Sloughing.

"What is the best kind of bobbin to use to prevent kinking and sloughing-off?" was next asked.

John Hampton said that there are a lot of things that enter into kinking and sloughing off; that the spinner can do a lot of things to prevent it which can be offset by the weavers' putting too much power on the loom. He said he prefers the grooved bobbin, and that "it has always been my policy to cover the filling up enough to keep it from sloughing off." He told of an experience once in a mill when they used a chute to convey the filling to the weave room, saying they were bothered with sloughed-off filling until they eliminated the chute, because the movement of the quills in the chute seemed to start the yarn to sloughing.

J. R. Federline, Jr., reported occasional difficulty with sloughing off on Monday morning after a cold week-end, attributing this to the temperature or humidity condition of the room. C. E. Davis said that in his opinion the lay gear was very important; that if the yarn is not laid properly, regardless of whether it is covered or not, sloughing off will result. In this connection he pointed out that "you do not have sloughed-off filling with re-wound bobbin," because the yarn is laid on the bobbin properly.

Regarding the trouble of sloughing off on Monday morning, R. J. Jennings said they eliminated this largely by having the humidifier man come around on Sunday afternoon and turn on the humidifiers for 15 or 20 minutes, and then again early Monday morning before the mill was started. In addition, he said, "we go around on Monday morning and sprinkle the filling in the boxes, wetting it down pretty good. This doesn't hurt anything, and it does help to eliminate the sloughing off."

There was some impromptu discussion here as to sloughing off. J. T. Phillips said he had found that most of his sloughing-off comes at the top, and that in his opinion this is caused largely by the hesitation or dwell of the traverse. He said that he did not believe that anybody running spinning frames more than 25 years old could prevent this, but there were several present who disagreed with him. Mr. McLane, of Albertville, said that, "we had trouble with kinky filling and the yarn sloughing off, but we did not lay it to the type of the bobbin. We speeded up the traverse and heavied up on the traveler and took out some twist, and this helped us a great deal."

Mr. Ryckman said that in his opinion, the bobbin has nothing to do with sloughing off. He related this experience: "We found our yarn sloughing off, and while I am not an inventor, one of our men conceived the idea that if he could get each successive rise of the rail to whip over the next one, and then, come down and tie it on, he would get what we wanted, and he suggested the idea of making a cam with each point ⅛-inch shorter than the one ahead of it. We made one for our frames, and it worked like a charm. This means that on a three-point cam, one point would be 1⅛-inch, the next 1-inch, and so on. I was going to be a big man by patenting this, and I wrote to the machinery builders about it, and they told me if I would look on such-and-such a page in their catalog I would find it, what they called a composite cam. It was there all of the time but I didn't know it. It is an absolute cure for sloughing off."

Filling Wind Versus Warp Wind.

Someone asked here whether running the traverse down fast and up slow or down slow and up fast would have anything to do with the sloughing off, and Mr. Federline and Mr. Hampton both said that the proper way would be down fast and up slow.

The next question brought up the much-discussed subject of filling wind for warp. It read, "Can you run filling wind on 30s carded and maintain your

breaking strength with less twist than warp wind?"

John Hampton was an advocate of filling wind, saying that "I would not go back to the old style warp wind for anything if I could help it. I am a strong believer in filling wind. I can run with less twist and get better breaking strength; I can use two to three teeth less twist." He added that his spoolers had increased from 10 to 16 sides since putting in the filling wind. Mr. Lanier, overseer at Shawmut, said he had tried filling wind on 7s, but could not get as much yardage on the bobbin as with warp wind.

Mr. Hampton expressed the opinion that filling wind caused less weak places in the yarn, which aided in the weaving, and pointed out that while it used to be a case between overseers of hog-eat-hog, he believed that a man in any department of the mill should strive to help increase weave room production and weave room quality.

Mr. Miller asked if Mr. Hampton had tested the strength of the yarn throughout the entire bobbin and taken the average. Mr. Hampton said he had found little difference throughout, and, while up, added that on the filling wind, he gets away from the pull of the traveler; that the traveler can be more easily regulated.

C. E. Davis.

G. W. Lehman.

F. D. Williams.

Another man reported that his tests had shown on filling wind that the top half of the bobbin is somewhat weaker. Mr. Lanier said in his opinion that when you go to filling wind you put on a heavier traveler, which still has a pull on the yarn. In his opinion, it is more a matter of playing with the lay gear. "If you will play with your lay you will get rid of a lot of spooler hands and doffers. We have 7s yarn with spoolers running eight sides, 102 bobins to the side, and 14 sides on 12s—and this is because we handle the lay."

J. R. Federline, Jr., said in connection with filling wind: "On warp wind, the greatest tension on the yarn is when you are winding on the empty bobbin. You of course fit a traveler here just heavy enough to keep the ends from pulling down or stretching the yarn. Then, as the bobbin fills with yarn, the package becomes larger in diameter, and the distance from the guide wire to the ring rail at the top of the traverse increases, and the distance from the guide wire to the ring rail at the bottom of the traverse decreases. The disadvantage here is that when you have the package one half full, the balloon is excessive and from the half way point until the full package has been wound, the tension is not great enough on the yarn.

"On the filling wind, however, the fitting of the traveler begins at the bottom of the bobbin for say 1½-inch to 2 inches from the bottom, just enough to hold the balloon down. After the ring rail has traversed 1½ inches up on its wind, you will find that the tension increases from there up to the full package. The balloon of the yarn is partially taken care of by the short stroke on the traverse. I have found that I can run spinning on filling wind with less twist and still maintain my average breaking strength.

"In running long traverses, with high speeds, the greatest pull on the yarn at the bite of the roll, is when you start the frame, and the yarn is winding at the bottom of the empty bobbin."

Mr. Mims of Avondale was called upon. He said he had filling wind now, but no experience in changing over a job. However, he added, at a mill where he was previously they had changed from warp wind to filling wind, and his successor had told him that on 21s, they run with five teeth less twist, and less ends down.

Break Draft in Spinning.

"What break draft is best on spinning, and how does it affect the breaking strength of the yarn?" was the next question.

Mr. Hampton said he had made some tests on this, on four frames. On one type of frame, he said, he could see no difference, but on another type, one with double draft, head and foot end, he found that he got much better work with five teeth difference in the break draft between the back and middle rolls than in the draft at the head. "We used to run a difference of 2, and I have gone as high as 7. I think that the difference is due to the twist in the roving and the toughness in the cotton. But I got better results on this type of frame by using five teeth difference."

"We get our best results with 1.12," said J. R. Federline, Jr. "I have run it 1.48 with no advantage in breaking strength."

"Our frames came with 1.05," reported C. E. Davis, of Pepperell, "and we have changed some to 1.10 and some to 1.12, and the 1.12 gives us about two pounds better breaking strength." Mr. Mims said he had been having trouble on fine numbers with roving lapping around the middle roll, and he had changed the break draft from 1.05 to 1.14, but this had no effect on it. He wanted this particular problem discussed, but there were no experiences related concerning it.

Cork Rolls in Carding and Spinning.

"What advantages do we get from cork rolls in carding and spinning?" was next asked by the chairman.

Speaking of the card room rollers, J. L. Bowles, of Fairfax, said they now have about two-thirds of the card room equipped, and that they have had some in over a year, having lost only three rollers. He said he could tell no difference in the breaking strength or the running of the frames, and that he experiences

(*Continued on page* 693.)

A Testing Laboratory *for the* Textile Mill

By R. H. Adams

Callaway Mills General Offices

THIS DISCUSSION of a mill laboratory is based on the experience of the Callaway mills' work along this line, of which Mr. Adams has charge. He gives information here which will be helpful to all types of mills. This discussion is abstracted from an address before Committee D-13, of A. S. T. M., in Charlotte, N. C., last month. The illustrations are used to supplement and clarify the text of his remarks.

AT THE PRESENT TIME textile laboratories in the United States are divided generally into two groups—those operated as a part of a single mill organization and those operated for mutual benefit by a group of mills. These units have grown to the point where they are of great importance to the success of the industry, since they are actually the only scientific agencies for originating new methods, improving existing processes, and solving the many manufacturing problems which face the mill executive.

Before the establishment of the textile laboratory, practically all material was produced against specifications supplied either by the purchaser or developed solely and expensively for standard production through bitter experience. Specifications from the purchaser were generally limited, and still are, to performance factors. For instance, that the strength must be so much in one direction, and that the burst must be so much in either direction. Usually it was known for what job the material was designed. But without means for research and testing, it happened many times that in meeting the specifications a great deal of costly work was done which ranked simply as a dead loss, before the proper manufacturing conditions were located through the rule of thumb method which most mills followed.

With the establishment of the textile laboratory, the necessity for this crude method of solving problems was eliminated. The research specialist in charge of the laboratory of today is a scientist in the textile field. With the equipment at his command, he is able not only to work out the tensile strength of the individual yarn or fabric, but is able to calculate the tensile strength necessary to meet practically any specified job. Through his ability to specify raw stock, method of spinning, method of weaving, and finish, he is a source of immediate profit to his organization.

The results of the first textile laboratory units were received with a doubtful enthusiasm by the mill executives. The fact that these results were reached with the aid of instruments, and without using a bale or two of cotton beforehand, made them seem unreal. As, however, case after case proved the rightness of the calculations, men who had originally opposed the idea became its strongest supporters; so that today wherever a mill has a testing laboratory in its organization or at its command, the manufacturing group are only too glad to submit their problems to the laboratory, knowing full well that these will be solved promptly and economically as possible.

Mr. ADAMS.

Not only does the textile research specialist assist his organization through calculating methods for new problems, but he also proves of great value through constantly studying, searching, testing, to find better and more economical means of producing the standard fabric of his organization on a basis of higher quality and lower cost.

For the mill just establishing its own research and testing laboratory three things are necessary. A skilled textile research specialist, who is acquainted with the scientific side of textiles as well as with mill machinery and its manipulation, should be selected for the work. He must be tactful, as he will be brought into close relations with foremen and superintendents, and must be able to get over to them his understanding of their problem and his desire to assist them in solving it. His work shop, the laboratory, must be equipped with the necessary machinery and instruments to do his job. The most thoroughly trained man in a scientific field is helpless without his equipment. Finally, the laboratory should not be bound by ordinary rules. Much of their work is in exploring new fields, meeting and solving new problems, therefore, they must set up their own rules of operating to a very great extent.

In developing the routine work of a textile testing laboratory there are three important questions to consider, namely: the physical, the analytical and the chemical.

The physical question deals with the mechanical properties of the manufactured products, such as the determination of tensile strength, stretch

breaking strength with less twist than warp wind?"

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F. D. Williams.

Another man reported that his tests had shown on filling wind that the top half of the bobbin is somewhat weaker. Mr. Lanier said in his opinion that when you go to filling wind you put on a heavier traveler, which still has a pull on the yarn. In his opinion, it is more a matter of playing with the lay gear. "If you will play with your lay you will get rid of a lot of spooler hands and doffers. We have 7s yarn with spoolers running eight sides, 102 bobins to the side, and 14 sides on 12s—and this is because we handle the lay."

J. R. Federline, Jr., said in connection with filling wind: "On warp wind, the greatest tension on the yarn is when you are winding on the empty bobbin. You of course fit a traveler here just heavy enough to keep the ends from pulling down or stretching the yarn. Then, as the bobbin fills with yarn, the package becomes larger in diameter, and the distance from the guide wire to the ring rail at the top of the traverse increases, and the distance from the guide wire to the ring rail at the bottom of the traverse decreases. The disadvantage here is that when you have the package one half full, the balloon is excessive and from the half way point until the full package has been wound, the tension is not great enough on the yarn.

"On the filling wind, however, the fitting of the traveler begins at the bottom of the bobbin for say 1½-inch to 2 inches from the bottom, just enough to hold the balloon down. After the ring rail has traversed 1½ inches up on its wind, you will find that the tension increases from there up to the full package. The balloon of the yarn is partially taken care of by the short stroke on the traverse. I have found that I can run spinning on filling wind with less twist and still maintain my average breaking strength.

"In running long traverses, with high speeds, the greatest pull on the yarn at the bite of the roll, is when you start the frame, and the yarn is winding at the bottom of the empty bobbin."

Mr. Mims of Avondale was called upon. He said he had filling wind now, but no experience in changing over a job. However, he added, at a mill where he was previously they had changed from warp wind to filling wind, and his successor had told him that on 21s, they run with five teeth less twist, and less ends down.

Break Draft in Spinning.

"What break draft is best on spinning, and how does it affect the breaking strength of the yarn?" was the next question.

Mr. Hampton said he had made some tests on this, on four frames. On one type of frame, he said, he could see no difference, but on another type, one with double draft, head and foot end, he found that he got much better work with five teeth difference in the break draft between the back and middle rolls than in the draft at the head. "We used to run a difference of 2, and I have gone as high as 7. I think that the difference is due to the twist in the roving and the toughness in the cotton. But I got better results on this type of frame by using five teeth difference."

"We get our best results with 1.12," said J. R. Federline, Jr. "I have run it 1.48 with no advantage in breaking strength."

"Our frames came with 1.05," reported C. E. Davis, of Pepperell, "and we have changed some to 1.10 and some to 1.12, and the 1.12 gives us about two pounds better breaking strength." Mr. Mims said he had been having trouble on fine numbers with roving lapping around the middle roll, and he had changed the break draft from 1.05 to 1.14, but this had no effect on it. He wanted this particular problem discussed, but there were no experiences related concerning it.

Cork Rolls in Carding and Spinning.

"What advantages do we get from cork rolls in carding and spinning?" was next asked by the chairman.

Speaking of the card room rollers, J. L. Bowles, of Fairfax, said they now have about two-thirds of the card room equipped, and that they have had some in over a year, having lost only three rollers. He said he could tell no difference in the breaking strength or the running of the frames, and that he experiences

(*Continued on page* 693.)

A Testing Laboratory *for the* Textile Mill

By R. H. Adams

Callaway Mills General Offices

THIS DISCUSSION of a mill laboratory is based on the experience of the Callaway mills' work along this line, of which Mr. Adams has charge. He gives information here which will be helpful to all types of mills. This discussion is abstracted from an address before Committee D-13, of A. S. T. M., in Charlotte, N. C., last month. The illustrations are used to supplement and clarify the text of his remarks.

AT THE PRESENT TIME textile laboratories in the United States are divided generally into two groups—those operated as a part of a single mill organization and those operated for mutual benefit by a group of mills. These units have grown to the point where they are of great importance to the success of the industry, since they are actually the only scientific agencies for originating new methods, improving existing processes, and solving the many manufacturing problems which face the mill executive.

Before the establishment of the textile laboratory, practically all material was produced against specifications supplied either by the purchaser or developed solely and expensively for standard production through bitter experience. Specifications from the purchaser were generally limited, and still are, to performance factors. For instance, that the strength must be so much in one direction, and that the burst must be so much in either direction. Usually it was known for what job the material was designed. But without means for research and testing, it happened many times that in meeting the specifications a great deal of costly work was done which ranked simply as a dead loss, before the proper manufacturing conditions were located through the rule of thumb method which most mills followed.

With the establishment of the textile laboratory, the necessity for this crude method of solving problems was eliminated. The research specialist in charge of the laboratory of today is a scientist in the textile field. With the equipment at his command, he is able not only to work out the tensile strength of the individual yarn or fabric, but is able to calculate the tensile strength necessary to meet practically any specified job. Through his ability to specify raw stock, method of spinning, method of weaving, and finish, he is a source of immediate profit to his organization.

The results of the first textile laboratory units were received with a doubtful enthusiasm by the mill executives. The fact that these results were reached with the aid of instruments, and without using a bale or two of cotton beforehand, made them seem unreal. As, however, case after case proved the rightness of the calculations, men who had originally opposed the idea became its strongest supporters; so that today wherever a mill has a testing laboratory in its organization or at its command, the manufacturing group are only too glad to submit their problems to the laboratory, knowing full well that these will be solved promptly and economically as possible.

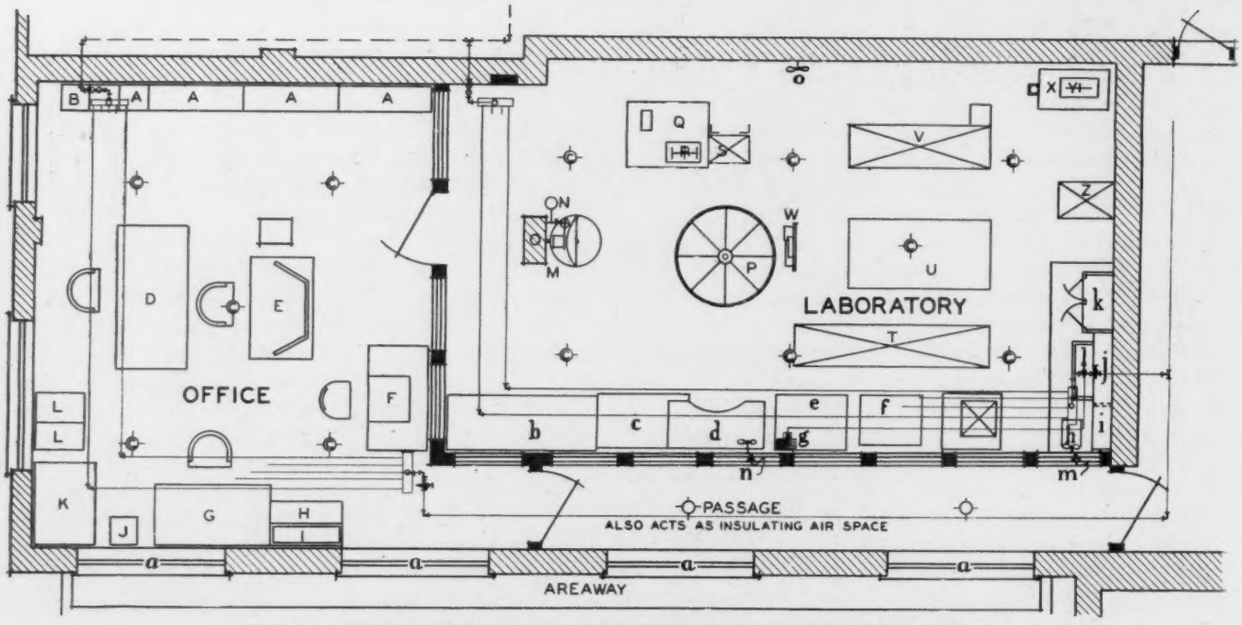
Mr. ADAMS.

Not only does the textile research specialist assist his organization through calculating methods for new problems, but he also proves of great value through constantly studying, searching, testing, to find better and more economical means of producing the standard fabric of his organization on a basis of higher quality and lower cost.

For the mill just establishing its own research and testing laboratory three things are necessary. A skilled textile research specialist, who is acquainted with the scientific side of textiles as well as with mill machinery and its manipulation, should be selected for the work. He must be tactful, as he will be brought into close relations with foremen and superintendents, and must be able to get over to them his understanding of their problem and his desire to assist them in solving it. His work shop, the laboratory, must be equipped with the necessary machinery and instruments to do his job. The most thoroughly trained man in a scientific field is helpless without his equipment. Finally, the laboratory should not be bound by ordinary rules. Much of their work is in exploring new fields, meeting and solving new problems, therefore, they must set up their own rules of operating to a very great extent.

In developing the routine work of a textile testing laboratory there are three important questions to consider, namely: the physical, the analytical and the chemical.

The physical question deals with the mechanical properties of the manufactured products, such as the determination of tensile strength, stretch



SKETCH OF LABORATORY OF CALLAWAY MILLS GENERAL OFFICES.

A—book-cases; B—lockers; C—overhead lights; D—manager's desk; E—analysis desk for analyzing swatches and yarn, equipped with 12-inch glass windshield; F—stenographer's desk; G—assistant's desk; H—twist tester; I—instrument cabinet; J—card file; K—table for records; L—files; M—Bahnson humidifier; N—pressure gauge; O—pressure regulator for humidifier; P—revolving conditioning rack, with spindles for yarn and arms for cloth, driven by motor and worm gear on floor; Q—yarn table with scales and reels; S—100-lb. Scott yarn tester; T—300x800 lb. Scott horizontal cloth tester; U—cloth table; V—300x800 lb. Scott horizontal cloth tester; W—recording psychrometer; X—automatic electric oven on swivel wheel carriage; Y—balance; Z—50-lb. Scott vertical tire cord tester; a—steel sash pivoted and screened; b—sample bin; c—table for testing crimp, thickness, etc.; d—inspection table; e—telephone table; f—wastebox; h—two-eye hot plate; i—cabinet; j—shelf; k—reagent cabinet; l—sink; m and n—stationary fans; o—oscillating 16-inch fan.

and elongation, the effect of twist upon strength and its relation to proper tension in weaving, the absorbing qualities of cotton of different kinds, the moisture regain of different fabrics in process under the same conditions, and the action of moisture on yarns and fabrics.

The chemical section should be equipped to handle any kind of finished materials that may be presented for extraction, dissection or identification of fibers, for determining percentage of sizing compounds, estimate of finishing materials used, the reaction to acids, to washing and to sunlight.

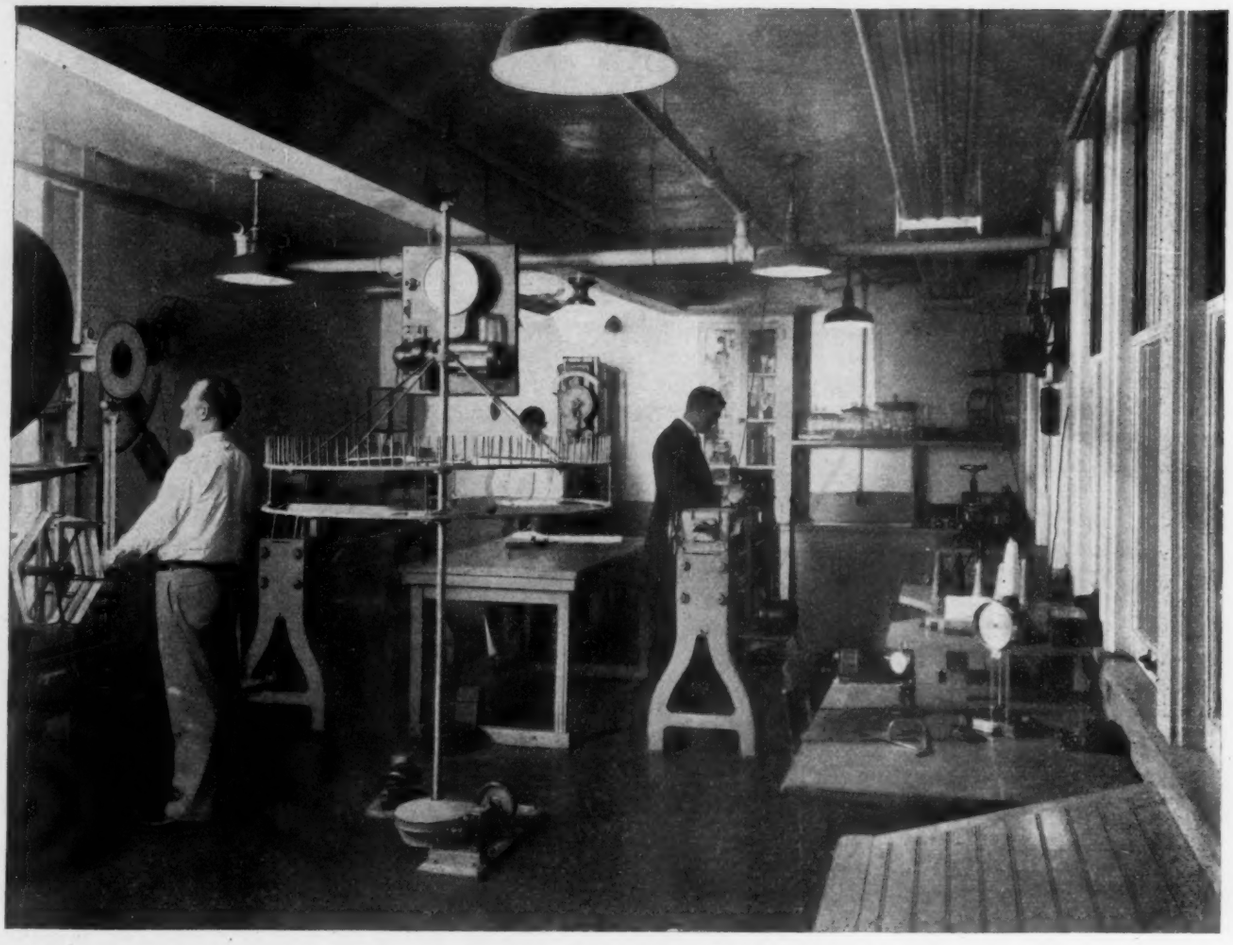
The laboratory equipped for routine testing of textile materials should be properly built, with plenty of room, abundant light, and with tables and machines so arranged as to save time and energy. Especially important is it that standard atmospheric conditions be provided, as all results of value depend on the conditions under which tests are made. Naturally the basic factors of relative humidity or cotton regain must be established under standard conditions before dependence can be placed upon the results of the tests enumerated above.

All materials of current production should be tested daily. They should be carried to the laboratory and thoroughly conditioned in an atmosphere which is as near to a standard as possible to maintain; and after conditioning, the test should be made under the same conditions. The moisture should be checked, and records of the results should be made and compared with previous records. If this method is followed a standard for all yarns and fabrics can be made, and any deviation from this at any time can be promptly corrected by checking closely with the mill.

Special yarns and fabrics being developed against specifications should be tested in every stage of development, should be checked carefully for weight, tensile strength, and construction; and every detail should be recorded and results checked with specifications. Tensile strength should be kept well above the margin required by specifications.

As to the methods of testing, there are many in use by consumers of fabrics. Those devised and published, however, by the A. S. T. M. are the best to follow, and it is the opinion of the writer that the testing of textile materials, especially cotton fabrics, may be confined to two methods. These are the 1½-inch strip method and the 4x6-inch grab method. Also, either of two conditions of moisture may be employed, the one at bone dry and the other at a definite regain as 6½ per cent. The idea of standardizing both these methods is suggested for the reason that most fabrics are now tested in a general way by either one or the other. However, it is the writer's opinion that the 4x6-inch grab method at 6½ per cent regain is more suitable for all woven fabrics, since it gives a true relation between the warp and filler strength. It is also more easily and quickly applied.

The laboratory has come to stay in the textile industry, and to intelligently take care of our present needs, as well as to plan for the future, we must provide such an agency as certainly and naturally as we



INTERIOR OF CALLAWAY LABORATORY.

This photograph shows the interior of the laboratory of which a sketch is presented on the preceding page. The revolving conditioning rack is shown in the foreground, with the recording psychrometer just back of it. The photograph also shows clearly some of the other major equipment of the laboratory. Mr. Adams is shown at the horizontal cloth tester in the background.

would any other part of our manufacturing equipment. Only through its aid may we materially improve our product, reduce our costs to the lowest degree, and be sure of shipping a finished product that we know is right. Much has been said in recent years, and many volumes have been written, on the subject of textile laboratories; but, as in the case of Mark Twain's weather, "Everybody has talked of it, but very few have done anything about it."

The attached blue print is a suggested plan for a laboratory, showing the minimum floor space and the correct placement of equipment. This particular laboratory has been in operation for about four years, and is equipped to handle between 40,000 and 50,000 samples per year. The nature of its location and construction has enabled us to carry an average temperature for four years of 78.29 degrees, and to maintain an atmospheric condition that is as near standard as is possible in a southern climate. Under all kinds of weather conditions the light is evenly distributed. The equipment is conveniently placed, and includes a revolving conditioning rack with 100 spindles for yarn, and space for about 100 half yard full width cloth samples. It is driven with a ¼-h.p. motor and makes about two revolutions per minute. The room is provided with positive humidity control, and has a complete artificial circulation to keep down the stratification of moisture as far as possible. This laboratory has proved to be thoroughly practical for routine testing and the plan is offered for the consideration of any who may be interested in the general subject.

Certainly in our day when the tremendous speed of style and merchandise movements necessitates coordinated action in every industry in the country, it is vitally necessary that the textile mills have at their command scientific means for solving manufacturing problems promptly, accurately and efficiently. The textile research laboratory is the scientific unit on which the mill must depend. On the efficiency of the research work and the extent to which it is used by the industry will depend in large measure the future importance of the textile industry in relation to the manufacturing groups of the country.

Uncalled-for Leaks *in a* Power Plant

By C. T. Baker
Consulting Engineer

WHILE THIS REPORT of waste of power, heat and fuel, is based on a plant in another industry, the conditions and equipment are similar to those existing in many textile mills. The possibilities for these wastes, therefore, exist in the textile mill, just as Mr. Baker found them in this wood-working plant. If you feel that the power and heating cost in manufacturing is only a small percentage of the total cost of production, read of the extravagant wastes here, and then check up on your own local conditions, in the heating plant and at the slashers and wherever else steam is used for processing.—THE EDITOR.

RECENTLY the writer made a survey of of the power plant in a large wood working and door mill which disclosed so many sources of waste frequently encountered in the textile mill, it was thought that the findings in this instance would be of value to some cotton mill operating executives, hence this short article.

The plant in question received power from a simple corliss engine rated at 225 h.p. which was supplied with steam at a pressure of 135 pounds. Indicator cards taken from this engine showed that with all machines running, 220 indicated h.p. was being developed.

Indicator cards taken for the purpose of determining the friction load with all machines out of service, disclosed that 35 per cent of the total engine h.p. developed at full load was consumed in friction by the various line shafts, counter shafts, etc.

Loss of Mechanical Power.

An examination of the transmission equipment showed one of the worst conditions that the writer has found in many years of experience. The shafting throughout was, for most part, out of level and alignment, due in part to improper erection and in part to the settling of the beams which supported the bearings and also in some instances, to the maladjustment of the flanged couplings where various sections of shafting were joined. This condition was reflected by a pronounced wabble in the shafting at these locations. Wherever the face of the coupling does not line in a plane at right angles to the length of the section of shaft, trouble is inevitable.

What was needed in this particular instance was a complete overhauling of the shafting which would call for a re-lining and leveling of practically all of the transmission equipment in the mill. In addition to this, a great many of the journal bearings were not provided with proper means of lubrication with the result that considerable power was consumed by friction due to lack of oil.

Waste of Heat.

In some instances it was found that belts were too light for the work required and in order to meet the load conditions, the belts in question had been tightened to such an extent that the friction imposed on the bearings was out of all proportion to what would have been the case had a belt been selected in keeping with the requirements of the drive.

Usually, two dry kilns were kept in service for kiln drying lumber. These kilns were heated with steam supplied direct from the main boiler plant at 135 pounds pressure. Each kiln was fitted with one-inch heating coils containing several thousand square feet of heating surface and naturally, when steam was turned into these coils with a fresh loading of lumber and with the kilns cooled down, a great deal of steam was required for the first several hours operation. The hot condensate was drained from these coils by steam traps, with the trap discharge turned into the sewer. Since city water had to be purchased for boiler feed, it is evident that for each cubic foot of water wasted to the sewer, an equal amount of city water had to be purchased from the city.

In addition to the waste of water in this manner, a great amount of valuable heat was also thrown away in the condensate which should have been returned to the boilers. In winter considerable of both live and exhaust steam was required for heating. The resulting condensate from the heating system was likewise dumped into the sewer. Since there was not sufficient refuse to supply the fuel requirements, several tons of coal were required each day. This cost $4.00 per ton delivered.

The Boiler Plant.

The boiler plant had been badly neglected and fuel was being wasted, actually thrown away because of this neglect. Stack dampers were not used as they had been removed and the condition of the boiler settings was deplorable. Great quantities of excess air entered the furnaces and combustion chamber due to openings and cracks in the brick work and since cold air thus admitted was heated by passing through the furnace and combustion chamber, it is evident that large quantities of heat were wasted to the stack, heat that otherwise would have been absorbed by the water in the boilers and converted into steam.

It is sometimes argued that the power and heating cost in manufacturing is only a small percentage of the total cost of production. This may be true, yet how can modern management tolerate waste on the scale as was found to exist in the case under discussion?

When you give your orders to your section men to do something that you know they really don't want to do, don't you admire the fellow who goes at the job wholeheartedly, like it was almost a pleasure? Well, now, how do you go at carrying out those same kind of orders for your superintendent?

CURRENT TOPICS

Committee D-13 Meets in Charlotte

ON MARCH 13TH AND 14TH, Committee D-13, the textile committee of the American Society for Testing Materials, held its annual meeting at the Charlotte Hotel, Charlotte, N. C., with a representative attendance of committee members and guests. A number of separate meetings of sub-committees considered alterations in existing tentative standards and standards, which will be submitted for letter ballot.

W. R. Whitcomb, of Henry L. Scott & Co., Providence, R. I., chairman of the committee, presided at the general sessions. A number of addresses from representatives of the Department of Agriculture, relating to research work on cotton fibers, etc., featured the general sessions on Friday. E. C. Gwaltney, vice-president of the Morgan Cotton Mills, Laurel Hill, N. C., discussed a new method of laboratory regain, which will be described in a later issue of COTTON. R. H. Adams, testing engineer of the Callaway group of mills, LaGrange, Ga., presented a paper dealing with the laboratory and its functions in connection with the textile mill. An abstract of this paper appears upon another page of this issue of COTTON.

Talk of the Month

WORLD CONDITIONS in commodities have created a situation for industry in the United States which demands more than ever the use of definite services available for the proper adjustment of manufacturing operations. The last of the year 1929 found the textile industries making some sort of concerted effort to forestall futile cutting of prices. But the cumulative effect of the world excess in production in raw materials has been an irresistible force for reduction of prices in converted materials. The problem now is to create new confidence among buyers on the adjusted basis of values, which in the end may be productive of a larger distribution than under the old conditions purely by virtue of low costs to the consumer.

Set Prices on Value and Stick to Them

Again manufacturers have faced the evils of a declining market, in the shape of unhealthy competition and consequent hesitation among buyers. In the wool industry some manufacturers have adopted the expedient of combatting such competition by offering their buyers something better in the regular lines, without any price cut. But whether this expedient be adopted or whether goods are priced lower to accord to lower cost of raw material, it is essential to establish a proper basis of charge and then to stand by it. A price for goods, be it high or low, should be one justified on the test of a reasonable profit and not one merely to promote orders for keeping the plant in operation whether or no. Under the latter practice, buyers will certainly press to the fullest advantage the shopping around for concessions.

Pending a period of real activity, dependent perhaps upon relief from the contraction of purchasing power due to unemployment and other results of the depression of recent months, the way to stability will come through furtherance of the program of general control of production to accord supply to demand. This is the soundest basis upon which to build a profitable turn-over of textile fabrics. Stability can best be secured under a right adjustment of manufacturing. It has been pointed out that the motor, steel, copper mining and other industries have learned to control their production in times of poor demand and cotton manufacturers are accused of being "painfully slow" to put such practice into effect.

One thing of difficulty in industry is for the individual producer to relate his affairs to broad general activities, but it is easy to recognize the indirect influence of group or national changes and this fact makes necessary the co-operative investigation of problems and concerted effort toward their solution. The peaks and valleys of business have been a curse to both employer and employee. Production regulation is calculated to reduce the erratic course of manufacture and, contrary to some supposition, it means better conditions of employment through steadier work.

In general the manufacturers of the country were reported to have made quick changes in their production in December and even in November, as the outlook threatened curtailment of demand. It was estimated late in February that print cloth production for nearly three months previous made averaged 75 per cent of capacity. This kind of thing is undoubtedly what the cotton industry needed and there is hope in the emphasis which discussion has dwelt upon adjustment of supply to demand during all this year to date.

Wool manufacturers have found that operating say 85 per cent of capacity on a reasonable basis of prices is more practical than aiming for 100 per cent at any figure that may be procured. H. Schniewind, Jr., president of the Silk Association of America, Inc., recently said: "In order to adjust ourselves to the changing character of demand, we shall have to gauge our operations on facts, rather than on expectations. It is well to remember that ability to produce large quantities of silks is no insurance policy for a satisfactory financial statement at the end of the year. Necessity is the mother of invention but apparently it is also the mother of the co-operation that develops when an industry is disturbed or puzzled by what is going on."

Signs Point to Better Basis for Improvement

President Hoover stated several weeks ago that a thorough study of the economic situation was convincing evidence that the worst of the depression consequent upon the fall stock crash was over and the employment situation was rapidly approaching normal. Shortly before that statistics of inventories of merchandise carried over the year-end by cotton merchandising units had been reported healthy and it was indicated that consumption was not reduced to the extent that production was contracted. That suggests that the industry about now should be in a sound position to start a new movement on a sound basis, provided the mills can be brought to a united effort through the Cotton-Textile Institute toward maintaining a production "gauged on facts" and not on capacity desires.

There's an Advantage in Trade-Making Products

In these days of greater direct attention of manufacturers to merchandising their fabrics and when the public is given so much to buying advertised products, the value of goods with a trade name naturally is enhanced. It is not strange that those mills with outstanding trade-marked lines are doing their utmost to capitalize these names in whatever way possible. In his annual report as president of the B. B. & R. Knight Corporation, for example, G. Edward Buxton called to attention that the name of Converse & Company has been changed to Fruit of the Loom Mills, Inc., "to further emphasize a most valuable asset" of the company. Another case is the change of the plant of the Naumkeag Steam Cotton Company to Pequot Mills. An old firm name may be symbolical of service, but a trade-mark name reaches the consumer most effectively.

Cotton is a Style Fabric

In spite of a poor start, 1930 affords favorable indices which may strike a favorable balance for the year if stability is restored soon enough. The prospect that the summer will realize the style potentialities long ago forecast for that season is supported by the recent report that Paris couturiers at their spring openings had more than four times the representation in cotton lines noted last year. Cottons were included in the collections of 41 designers and dressmakers. So far as Paris sets the fashion this is a good augury for cottons in the United States.

Even a bright spot has been found in the statistical conditions over the first two months of the year and, provided March has shown a furtherance of the program of proper adjustment of mill production, this situation will show improvement for the first quarter when the figures are available. The figures of the Association of Cotton Textile Merchants for February showed production below that of the same month last year and shipments for the month in 1930 were above the output, which was a pleasant surprise, as was likewise a decrease in stocks.

Over the years, the follower of things cotton has heard much of the sad results of concentration upon a limited field. The agricultural South has heard the need of freeing itself from dependence upon the one crop, cotton. Communities, notably in New England, have suffered from concentration upon the one industry, cotton manufacturing. Diversification has become a watchword. And now it is reported that mills, both North and South, are working to free themselves individually from dependence upon one outlet. It is obvious that a diversified line of production offers a better market. It does other things. There is less likelihood of seasonal slumps than when a company depends upon one outlet and less danger of being caught helpless from a shifting of demand.

The Trend Toward Diversification

Since mechanical trades have become so important an outlet for cotton constructions, the ability to keep up with changes has become particularly important. For those who look to new outlets, it should be worthwhile to make a careful study of the activities of the various Government departments investigating the thousand and one present and potential uses of cottons. These agencies are doing a manifold and extensive work which will attain its best ultimate good only through the mills taking advantage of it, which of course is secondary to the very real opportunity which appears to be offered to manufacturers.

What the Southern Mills are Doing

IT HAS BEEN ANNOUNCED that 1000 spindles and other equipment will be added to the Fairfax, Ala., plant of the West Point Mfg. Co., at an early date.

A new line of slip-cover materials with friction calender finish will be manufactured by Eva Jane Mill, Sylacauga, Ala., as soon as equipment is installed, according to recent announcement.

The new brick building which is being constructed for the engineering department of the Alabama Polytechnic Institute is scheduled for early completion. The equipment to be installed is to include 800 ring spindles, 26 looms and 4 knitting machines.

It was recently announced that a number of looms would be added at Whittier Mills, Chattahoochee, Ga.

According to recent report, 5,000 spindles are to be added at Roswell Mills, Inc., Roswell, Ga.

Atlanta Woolen Mills, Atlanta, Ga., are planning improvements to plant.

It is reported that the Atlantic Mfg. Co., will establish a rayon underwear plant in Macon, Ga.

Pilot Division of Consolidated Textile Corp., Raleigh, N. C., manufacturers of shirting and chambrays, a new line of automobile seat coverings, furniture covering materials, playwear suiting and furniture denims, are making a number of additions and improvements. Carding, spinning and weaving machinery is being overhauled; 15 cards will be provided with straight wire clothing and 50 new dobby heads on 20-harness Crompton & Knowles looms are also included in the new equipment.

Klumac Mill, Salisbury, N. C., recently was damaged by fire to the extent of $100,000. The largest portion of the damage was to new patterns for rayon bed spreads that were in the building ready to be installed.

Fairbanks, Morse & Co., Chicago, have contract for Diesel engine units for power plant at Royall Cotton Mills, Wake Forest, N. C.

Alfred Mills, Inc., Charlotte, N. C., who recently acquired the Savona Mfg. Company's cotton and rayon goods plant, have completed organization with Alfred Jepson president.

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Hickory Spinning Co., Hickory, N. C., recently placed an order with Borne Scrymser Co., for Breton Minerol process equipment.

Priscilla Mills Co., Ranlo, N. C., now reorganized under the name of Priscilla Spinning Co., are operating 20,000 spindles for the manufacture of fine combed yarns. Gordon A. Johnstone is superintendent, while Robert A. Bartlet is secretary and treasurer.

Carolina Power & Light Co., are conferring with business men of Sanford, N. C., in regard to establishing a silk mill in that city.

Spray (N. C.) Cotton Mills recently purchased a water wheel from Jas. Leffel & Co., Atlanta, Ga., which will make it possible to run the entire plant by water power.

The Valdese Mfg. Co., Valdese, N. C., is installing Breton Minerol Process equipment. The equipment was purchased from Borne Scrymser Co.

Darlington Fabric Mills, Charlotte, N. C., manufacturers of draperies and jacquard novelties, are installing 30 additional looms. The looms were moved from the company's plant in Pawtucket.

Boger & Crawford Spinning Mills, Lincolnton, N. C., are to install 4,000 mule spindles, made by Dobson & Barlow of England, for the manufacture of 140s yarn, and later 200s.

Allred Mill, Hickory, N. C., recently closed for one week in order to move machinery into new addition, which cost approximately $150,000. The new machinery that is to be installed is expected to be in place in a few days.

It was recently announced by the Amazon Cotton Mills, Thomasville, N. C., that they had purchased additional roving machinery from the Woonsocket Machine & Press Company.

Twelve new Fales & Jenks twisters are to be installed in the Carolina Cotton & Woolen Mills, Spray, N. C., immediately.

F. & M. Dye Works is the name of the plant which was formerly known as Howard Silk Throwing Company. This plant is located at Mebane, N. C., and was leased by Harry Dotts, Jr., and Frank Strauss, both of whom, before leasing this plant, operated the Howard Silk Throwing Company plant.

Riverdale Mills, Enoree, S. C., recently purchased oil spraying equipment from Borne Scrymser Co.

Monarch Mills, Lockhart, S. C., are installing 800 40-inch looms for the manufacture of sheetings and print goods. These were purchased from the Draper Corporation, of Hopedale, Mass.

The new plant of the Union Bleachery, Greenville, S. C., is now just about completed. A sprinkler system is being installed by C. M. Guest & Son of Anderson, S. C. A new power plant is to be installed and a new 1500 kw. traction type turbine has already been purchased from Allis-Chalmers Co., of Milwaukee. This will call for revamping of all steam piping and wiring. Electrical wiring is to be done by Huntington & Guerry, of Greenville, S. C. It is also stated that additional dyeing equipment will be installed.

At the annual meeting of the stockholders and directors of the Red River (S. C.) Cotton Mill, all officers and directors were re-elected. The following men were re-elected officers: Alexander Long, Sr., chairman of the board; York Wilson, president and treasurer; Daniel Heyward, vice-president; and C. P. Simpson, secretary.

It was recently learned that improvements are being planned by Carter Bros., Inc., Chattanooga, Tenn. This company manufactures mattresses, cotton bats, etc.

Some of the machinery of the Columbia (Tenn.) Cotton Mill has been shipped to Shelbyville, Tenn., and another lot to Humboldt, Tenn.

South Texas Cotton Mills, Brenham, Texas, have placed order with Borne Scrymser Co. for oil spraying equipment.

The Industrial Committee of Danville (Va.) Chamber of Commerce is considering a proposition which will call for the investment of $25,000 in a branch of the Rayon Corporation of New York. They are endeavoring to secure a plant in that city.

The Southern Silk Garment Corp., Martinsville, Va., are planning to double their present output by installing 100 additional machines.

Tubize Artificial Silk Co. of America, Inc., will establish a plant for coning artificial silk in Petersburg, Va.

Construction work is well under way on new unit of Viscose Co. of Marcus Hook, Pa. This plant is located at Parkersburg, W. Va. The new addition is to be larger than the present plant and will provide for production of about 1,200,000 pounds of yarn per month. General contractors are J. P. Pettyjohn & Co., of Lynchburg, Va.

Cotton Comment by H. & B. Beer

New Orleans, March 15th, 1930.

UNTIL OF LATE there continued a feeling of pessimism in the cotton market which carried values down about an additional $10 per bale during the period under review, or to the lowest price levels witnessed in about three years, or since the record crop season of 1926-27. However, the market recovered sharply from the recent extreme low levels, attributed partly to an apparent oversold position, trade buying, short covering, speculative support, by improvement in the economic situation, realizing that prices are comparatively very low, and because of a bullish private estimate as to final ginnings of the old crop, and some private returns indicating the probability of a sizable reduction in this year's acreage.

Returns to Secretary Hester show sales of fertilizer tags in nine cotton states, from August to February, both inclusive, to have been 1,434,050 tons against 1,156,869 for corresponding time last season.

There is the claim of the want of rain in West Texas where something akin to a drouth was complained of. There were some showers in West Texas over-night, and prospects are for more moisture in that section by tomorrow. So far it is said that only showers have fallen there, whereas a general heavy rain is desired.

The monthly report of the Association of Cotton Textile Merchants of New York, for February, showed sales of cotton goods 91.4 per cent of production, and shipments 103 per cent of production. Stocks at end of February decreased 1.7 per cent, and unfilled orders decreased 7.8 per cent.

The International Federation of Master Spinners estimated the world's consumption of cotton, all kinds, for the first six months of the season at 13,202,000 bales, against 12,868,000 for first half of last season; of which 7,083,000 were American against 7,613,000.

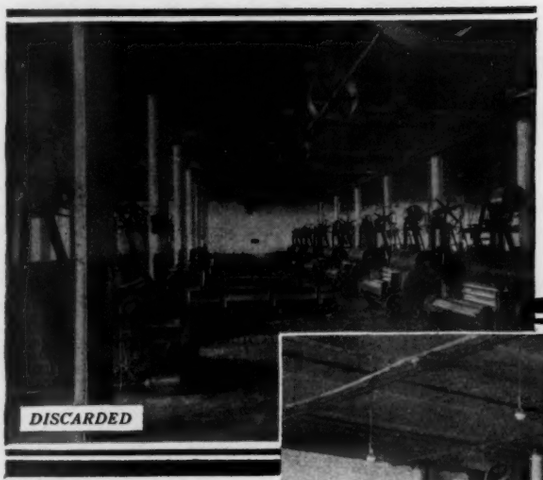
As to American, there was not one of these reports that could be called favorable, except that the textile report was considered as better than generally expected .

However, there are favorable features noted in returns of the International Federation of Master Spinners, viz: the large consumption of foreign growths for the first half of this season—6,119,000 bales against 5,255,000 for corresponding period last season, and as there is apparently no marked increase in foreign crops, in the aggregate, this year such a large consumption of the foreign product can only result in diminishing stocks of foreign raw cotton, in all probability, which would help the situation statistically. According to the figures furnished recently by the Federation, covering world mill stocks at the close of January, and the comparatives we have at hand for last year, world mill stocks on the first of February were about as follows, compared with one year ago:

WORLD MILL STOCKS, FEBRUARY 1st, ABOUT

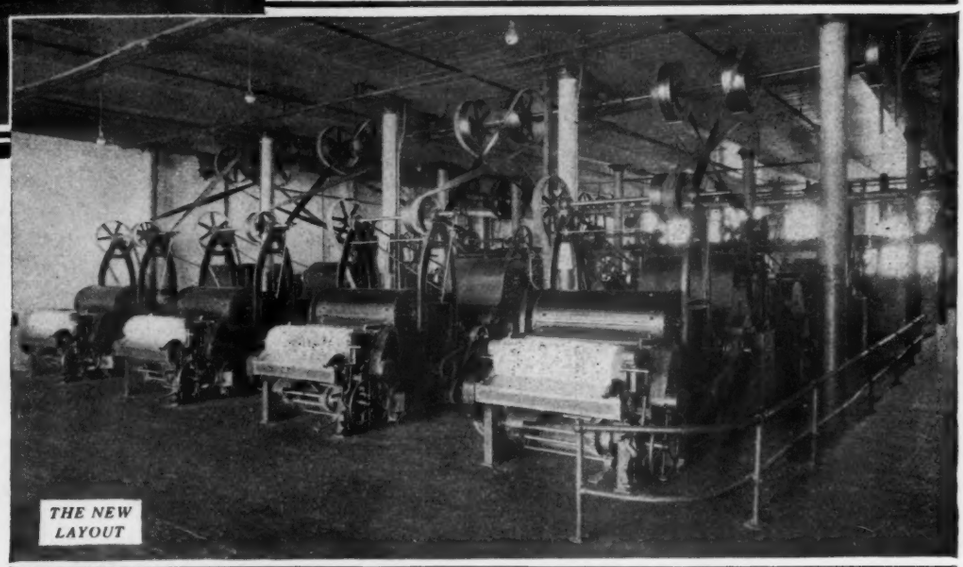
Bales, regardless of weight—	This Year	Last Year
American	2,742,000	2,958,000
East Indian	1,173,000	1,216,000
Egyptian	224,000	182,000
Sundries	792,000	901,000
Total	4,931,000	5,257,000

A study of the comparative stocks denotes that, since 2,742,000 bales were American against 2,958,000 last year, 2,189,000 were foreign against 2,299,000 last year. Therefore, it is revealed that not only were world mill stocks of American on February 1st apparently less than last year, but that mill stocks of foreign growths were evidently also smaller than one year ago, which is interesting because of the poor consumption showing of American, and owing to



4 MACHINES REPLACE 28

8000 FEET SAVED



SACO-LOWELL ONE-PROCESS PICKING AGAIN PRODUCES "BETTER LAPS AT LOWER COST"

A prominent South Carolina print cloth mill recently installed four Saco-Lowell One Process Picking units and saved 8000 square feet of floor space. The upper picture shows a portion of the larger one of their two old picker rooms, containing 7 discarded Finishers, 7 discarded Intermediates, and 5 discarded Breakers. Their smaller picker room, shown above with four new Saco-Lowell One Process Pickers, previously contained 3 Breakers, 3 Intermediates, and 3 Finishers,—all of which have been discarded. Continual operation of both rooms was necessary to keep the mill supplied with laps.

In their new layout the small room easily houses four new Saco-Lowell One Process Pickers, which keep the mill supplied with laps of greatly increased quality. A direct saving of cost is made due to the fact that two men now do the work formerly done by nine! You have an opportunity to apply this modernized processing in your mill. We would welcome an opportunity to present specific facts as to the savings that can be made.

SACO-LOWELL

MANUFACTURERS OF TEXTILE MACHINERY

147 Milk Street, BOSTON, MASS.

CHARLOTTE, N. C. SPARTANBURG, S. C. ATLANTA, GA.

BRITISH BOARD OF TRADE REPORT FOR FEBRUARY

	This Year	Last Year
Exports of yarn, pounds	12,000,000	14,000,000
Exports of cloth, yards	300,000,000	326,000,000

CENSUS REPORT.

United States—Bales—	This Season	Last Season
Consumption, February, including linters	556,127	662,928
Consumption, 7 months, including linters	4,302,648	4,527,900
Mill stocks, February 28th	1,811,639	1,744,229
Stocks in public storage and warehouses, February 28th	4,858,609	3,862,223
Stocks in mills, pub. stg. & whs. Feb. 28th	6,670,248	5,606,452
Active spindles during February	20,926,580	31,008,794

the reported large consumption of other kinds. Under the circumstances, the situation, so far as world mill stocks on February 1st were concerned, appears to be more favorable than generally supposed.

As to crop preparations in the South, Washington recently stated in its weekly review: "In the eastern cotton belt rains interferred with farm work to a considerable extent, especially in the interior eastern belt, but at the same time much land has been prepared and some cotton planted as far north as southern Georgia. West of the Mississippi river the preparation of soil made good advance and is well along except for some delay by wetness in Northeastern Arkansas. Planting is progressing in the southern part of Eastern Texas, and considerable is up in the extreme southern portion of that state, but rain is needed in the west. Planting is favorably advancing also in the southern valleys of Arizona."

Returns to Commerce & Finance, New York, point to an average decrease in this year's cotton acreage of 7.5 per cent, and returns to a prominent firm indicate final ginnings of 14,558,239 running bales, and indicate an average decrease in this year's cotton acreage of 8 to 9 per cent.

The further reduction in the rediscount rate to 3½ per cent from 4 per cent of the Federal Reserve Bank, New York, is looked upon as a constructive development of much importance since cheap money is generally a stimulant to general business and to trade expansion.

New England Mill Situation

March 18, 1930.

THE PAST MONTH has seen little material change in the situation among New England mills. Competition for business has been keen among the fine goods mills and their selling agencies, due to the continuation of low prices and to the general limitations placed on the industry by the recession of business through the country. Values of some of the fine cotton goods for which various eastern centers have been justly famed have been very low; in fact on some cloths it has been said that current prices have been unequaled since the collapse of the post-war boom. Manufacturers declare that such conditions cannot long continue, but still no improvement thus far appears.

The declines in raw cotton during this period have been such as to undermine confidence in the market and to give rise to unreasonable price ideas on the part of buyers. The finding that the crop has produced an insufficient amount of the longer cotton staple on which much of the eastern industry depends fails to find a sympathetic ear in the goods markets, and the supply of various cloths has prohibited any very strong movement for higher prices among the eastern mills. It is obvious, however, that many mills cannot continue to accept prevailing prices very long, the losses that some have already taken being of considerable proportions.

One of the tendencies growing out of the unsettled condition of cotton has been a movement toward heavier manufacture of rayon goods in the East. This pertains, however, to the mills that cannot well weather the storm and whose products are not of such outstanding importance as to be desirable to the exclusion of others. Some of the mills in the New Bedford and other Southern New England fine goods centers are currently found to have been considerable buyers of lower grade rayon yarns, which they have been turning into cloths that can be sold at the levels that buyers are more willing to pay.

Production in the East has not changed greatly from that of the previous month; it is perhaps a shade less and on a curtailed basis. Movements are afoot to reduce competition in the East, and are receiving the support of some influential organizations, but such is the character of mill operations in New England that it will require time before the industry can approach any degree of scientific regulation. And events of business during that period may greatly effect the outcome. Greater co-operative effort, it is worthy of mention, was a note once again struck a few days ago at the Southern New England Textile group meeting in Providence, R. I., at which Lincoln Baylies of the National Association of Cotton Manufacturers, Governor Norman Case of Rhode Island, and a number of other leaders in New England industrial and governmental thought were present.

Activities of the Mergers.

The New England fine goods mergers, as in the past, are ubiquitous in the news, and factors that are of growing importance in the consideration of the New England fine goods mills. The Berkshire Fine Spinning Associates, as an instance, reported a satisfactory month of February and the enlargement of the organization appeared possible in the event of a favorable action of the stockholders of the King Philip Mills in Fall River, Mass. The Loring merger too has not been inactive.

Berkshire has been an active seller of goods in the New York markets of late, and the volume of sales of the products of its several mills through New England has been satisfactory to its officials. Their stocks were considerably reduced over the month of February, and according to tneir statement they have booked a favorable amount of business on contract through April and May. The early half of March has also been fairly good and the Associates are hopeful of doing a better business in the current month than they did in February. Lawns and cloths of similar nature which the Berkshire people are large producers they find to have been active with prospects of their widespread use during the season.

The King Philip Mills proposition was to come up for action the 24th of March. Recently following a directors' meeting Simeon B. Chase, treasurer of King Philip Mills, announced that an offer had been received from the Associates and that the directors had unanimously voted to submit this to stockholders in special meeting the 24th. The directors were recorded as in favor of acceptance of the offer. The offer provides acquisition of the plant and $1,125,000 quick assets represented by inventory in exchange for Berkshire common and preferred, King Philip stockholders to receive for each share one-half share of Berkshire preferred and two one-seventh shares of Berkshire common plus cash which in the eyes of directors will amount to about $40. The action provides for liquidation of the balance of King Philip properties, the cash disbursement being made to stockholders after discharge of possible obligations, and the King Philip corporation dissolving. Fractional share provisions are arranged for.

Should the King Philip stockholders act favorably on the offer, the Berkshire Associates will have increased their aggregate to 636,600 spindles and 14,484 looms. Again if the Parker Mills proposition, negotiations for which are now pending, should go through Berkshire's aggregate would then be 864,000 spindles and 20,000 looms. Simeon B. Chase will be retained by Berkshire as well as Richard G. Riley, the superintendent. The King Philip enterprise may be enlarged under the Berkshire management. Cotton and supplies would be purchased in bulk.

The Loring interests, or United Merchants and Manufacturers, have also been active, having recently incorporated under Massachusetts law the United Rayon Mills as a subsidiary of the parent corporation. Machinery has been installed in the old Globe yarn mill in Fall River, Mass., creating a plant capable of manufacturing silk and rayon fabrics, dress silks, velvets, satins, mousselines, taffetas, and embroidery, knitting and crochet silks, as well as other

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Sharp as is his eye for costs, the G.T.M.—Goodyear Technical Man — has also a shrewd regard for profits. He is a rubber expert, long adept in the specification of Mechanical Rubber Goods to the needs of manufacturing industry. With increased profit always in view, with knowledge, skill, and energy, he drives home his tested economies. He knows how to transmit power, move materials, air and liquids, swiftly and smoothly through your plant. He reduces delay, he speeds schedules, he avoids waste. Many businesses similar to yours have profited by his practiced counsel. Your job is his job; his economies, your profits.

In textile manufacturing, the G.T.M. has an outstanding record. He knows your work and how to reduce its costs. He has specified Goodyear Compass (Cord) Textile and Compass Endless Belts to drive your machinery swiftly and smoothly. He is introducing to your multiple drives Goodyear Emerald Cord Multiple V Belts for new operating freedom. He has supplied Goodyear Wingfoot Air Hose and Goodyear Water, Steam, and Fire Hose for economy in all phases of your work. He is an expert on your job. He can save money for you now.

For complete data on the G.T.M. and his ability to help your business, write Goodyear, Akron, Ohio, or Los Angeles, California.

THE GREATEST NAME IN RUBBER

GOODYEAR

HOSE • BELTING • MOLDED GOODS • PACKING

goods. When completely equipped the mill will have 500 looms employing several hundred operatives. Goods will be finished at the Ashland Company plant at Jewett City, Conn., one of the Loring finishing establishments. United Rayon Mills is capitalized at $500,000, 5,000 shares of $100 par common, three shares issued for cash. Officers are, president, Homer Loring, Boston; treasurer, Myron L. McLane, New Rochelle, N. Y.; and clerk, William Van D. Jewett, Fall River, Mass.

In connection with the industry in Fall River, settlement out of court of the Border City Mills tax abatement case against the city of Fall River are of interest, the city refunding $45,727.54 of 1927 taxes in settlement for excessive taxation in 1927, 1928 and 1929. Thus the sum of $17,827.56 is awarded the corporation in settlement of 1928 taxes, $15,555.42 is awarded in settlement of taxes for the previous year, and $12,344.56 is abated in the real estate tax of the mill for 1929. The Border City now stands clear of city liens and taxes have been settled in full.

Special Commissioner Charles P. Rugg of Worcester, Mass., recently found that the King Philip Mills had been assessed $894,400 in excess of true valuation in 1927 and $525,000 in excess of 1928 true valuation, and are entitled to abatement of $31,840 on 1927 and $21,420 on 1928, plus interest on each, a total of $53,260 plus interest. Exceptions to the special commissioner's findings are being argued in the superior court.

Payment of a 34 per cent dividend in liquidation, or $266,000 approximately, to creditors of the Granite Mills, Fall River, by Thomas B. Bassett, receiver, have been sanctioned by the Massachusetts superior court, payment being made possible by sale of the mill to the Pepperell Manufacturing Company and from sale of goods and stock in process. Pepperell also has mills in Northern New England and in the South.

New Bedford has lost the New Bedford Silk Mills, which closed on February 25th for removal of its 120 looms and other equipment to Lebanon, Pa. The mills were a subsidiary of Foremost Fabrics Corporation. A new unit, the duplicate of the New Bedford plant, has been set up in Lebanon, machinery being brought in starting January 2 and double shift operations begun February 3, according to George Edwards, superintendent, who was engaged in the installation in Lebanon. The New Bedford plant employed 165 with a $300,000 annual payroll. Wage scales seem to have been at the bottom of the removal, inasmuch as the company has previously complained of this and tried to get operatives and unions to agree to a reduction to meet competition of other mills. Labor leaders in New Bedford charge that Lebanon offered freedom of taxation, preferential power rates, and rental of a mill at nominal rates with a 10 year option of purchase at cost.

In common with a general movement toward better representation in the New York market, the Neild and Bristol Manufacturing Companies have opened joint selling offices in the Textile building, 66-72 Leonard street, New York, under the name of Frank I. Neild Co., Inc., with Frank I. Neild who formerly represented the mills on frequent trips to the textile markets as president of the new concern.

In southern New England an outstanding development is the report of G. Edward Buxton, president, to the stockholders of B. B. and R. Knight Corporation, Providence, R. I., consisting of the consolidated statement of B. B. and R. Knight Corporation, Fruit of the Loom Mills, Inc., (formerly Converse & Co.) and Knight Finance Corporation. The Knight Mills showed a loss of $1,137,885 for 1929. Litigation involving Converse & Co. resulted in considerable losses, and a loss in capital assets was undergone through sale of the machinery of the Centerville, R. I. mill. Active mills for 1930 consist of the Royal, Arctic (wide sheeting), and Granite mills totalling about 150,000 spindles with 30,000,000 yards annual production and the Pontiac Finishing Plant capable of finishing about 60,000,000 yards of cotton and cotton-and-rayon goods, of which about a half can be printed. Optimism for the Fruit of the Loom fabrics was expressed, particularly with the new quarters in New York. The statement attacked overproduction as a major evil of the trade.

The Aponaug Company of Aponaug, R. I., has declared a regular quarterly dividend of 50c on common and $1.62½c on preferred, payable April 1 to stock of record March 15.

In Clinton, Mass., liquidation of the Lancaster Mills is contemplated. The question of new financing or liquidation has been brought up, but due to lack of 75 per cent. of the voting stock at a meeting recently called, action could not be taken. It is regarded as doubtful in informed circles that stockholders will subscribe further or authorize financing, many stockholders favoring liquidation. Lancaster Mills are cotton and rayon dress goods, gingham, and shirting manufacturers with 4,311 narrow looms. Amory, Browne & Co., have been their selling agents.

The Lawrence, Lowell, Mass., and Manchester, N. H., mills have been operating on an unchanged basis. Waterpower rights on the Winnepesaukee River have been a matter of dispute among a number of knitting mills in that district, among these being Pittman Manufacturing, G. H. Tilton and Son Co., William Clow and Son, Belknag Mills, Contoocook Mills, and others. The power dispute is now in the New Hampshire superior courts.

Another matter of interest is the annual report of Fabrics Finishing Corporation, Paterson, N. J., showing a loss of $180,951 after interest and depreciation. A profitable January of this year and indication of profits in February and March were at the same time reported. For the first quarter the company is expected to show earnings after interest and depreciation of approximately 50c per share on common.

A New D. C. Counter E. M. F. Automatic Starter.

A new counter E. M. F. type automatic starter, for small D. C. motors on general applications, is announced by Cutler-Hammer, Inc., 109 12th St., Milwaukee, Wis., who states that this new, small motor starter incorporates a number of new and important features such as: small size, reduced voltage starting, Thermal overload protection, low voltage protection and renewable silver contacts. It is rated up to 2 h. p., 115 or 230 volts. The contactors are designed especially for direct current service and the renewable silver contacts insure long life. Each starter is supplied with a separate pushbutton master switch providing three-wire remote control. Two-wire control can be furnished if desired.

Ciba and Cibanone Dyestuffs.

In circular No. 299 A the Society for Chemical Industry in Basel brings to notice certain new (P) Ciba and Cibanone dyestuffs. The mark (P) denotes exceptional fastness to light, water, laundering, wear and exposure.

It is also pointed out that since the appearance of the earlier circular No. 299, the following new dyestuffs are on the market: Ciba Violet 6R (P); Cibanone Yellow GK (P); Cibanone Golden Orange GN (P); Cibanone Violet 4R (P); Cibanone Dark Blue MBA (P); and Cibanone Marine Blue RA (P; GA (P.)

Of the aforementioned dyestuffs, fastness to kier boiling and bleaching is also claimed for the following: Cibanone Yellow GK (P); Cibanone Violet 4R (P); Cibanone Dark Blue MBA (P); and Cibanone Marine Blue RA (P); GA (P).

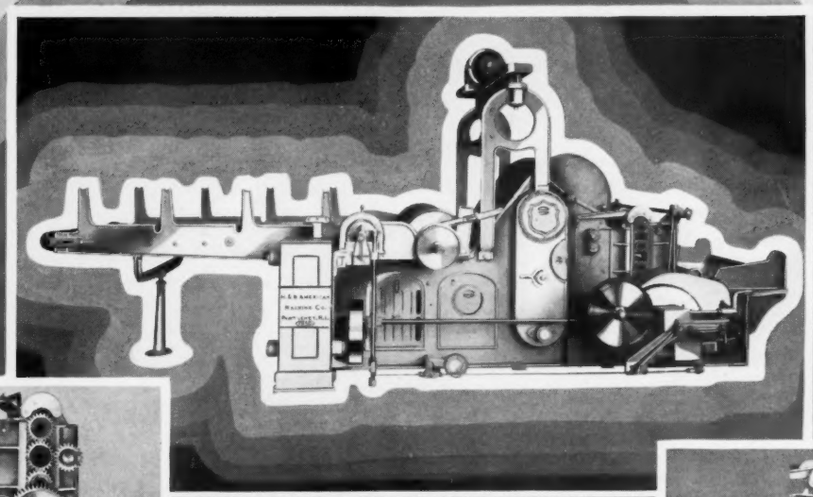
Wide Range of Products Now Carrying Durene Label.

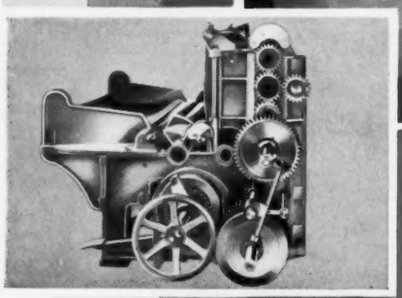
Licensed manufacturers using Durene yarns in their merchandise are now making an unusually wide range of products carrying the proper identifying label, and the major portion consists of wearing apparel, it was recently announced at the merchandising counsel office of The Durene Association of America.

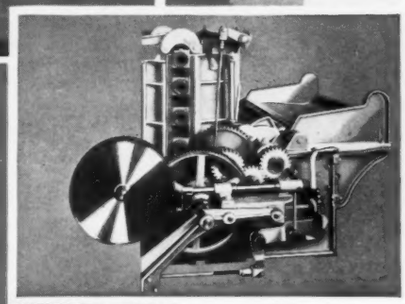
C. J. Tagliabue Mfg. Co. Opens Shreveport Branch Factory.

C. J. Tagliabue Mfg. Co., Brooklyn, N. Y., makers of industrial instruments, recently announced the opening of a branch factory at 417 Lake Street, Shreveport, Louisiana. The prime function of this new factory is repair work, with special attention to emergency orders.

ANNOUNCING THE MOST OUTSTANDING DEVELOPMENT IN PICKING MACHINERY IN 50 YEARS BY THE H & B AMERICAN MACHINE CO.







THE illustration above shows one of our New Single Beater Finisher Lappers fitted with the Ramsdell Automatic Self-Doffing Calender.

The illustrations at the right and left show each side of the Calender with Gear Covers and Casings removed.

This attachment has been especially designed so that it can be readily applied to all existing H & B Pickers.

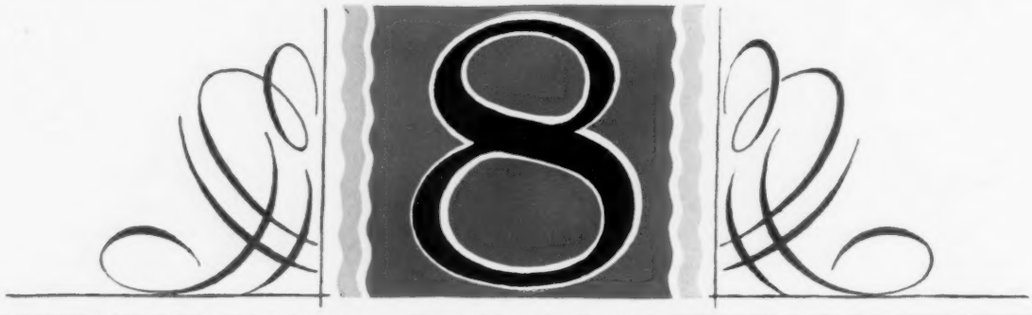
THE RAMSDELL AUTOMATIC SELF-DOFFING CALENDER

This remarkable attachment is truly uncanny in its operation. With an almost imperceptible hesitation it automatically removes the completed picker lap, places a new lap roll in the calender, carefully folds over the oncoming sheet of cotton, lowers the lap racks, and applies the brake; in other words, continuous operation from starting-up to shutting-down time. That all this can be done automatically without the assistance of human hands, seems an almost unbelievable development — yet it is actually accomplished with great smoothness and unerring accuracy.

H & B AMERICAN MACHINE CO.

The advantages of this more than humanlike machine are apparent at once to all familiar with Picking Machinery — no bad piecings — no piling up of the cotton on the cages — no damaged screens — no starting torque. An absolutely fixed yardage and weight for every lap. Increased production with decreased cost of labor, power, and repairs.

THE DREAM OF AGES HAS AT LAST BECOME A REALITY



AUTOMATIC OPERATIONS IN 6 1-2 SECONDS

1	Releasing Brake	5	Placing New Lap Roll
2	Raising Lap Racks	6	Folding Lap End
3	Severing Lap Sheet	7	Lowering Lap Racks
4	Doffing Finished Lap	8	Resetting Brake

It is practically impossible to give an adequate, detailed description of the workings of this marvelous attachment. Functioning with clocklike precision from starting-up to shutting-down time, lap after lap is gently ejected from the calender rolls — Each lap an exact duplicate of the previous one, absolutely accurate in yardage and weight. All this is done without the aid of human hands in any way.

We shall be very glad to provide further detailed information upon request or arrange for a demonstration at your convenience

H & B AMERICAN MACHINE CO.

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161 Devonshire Street

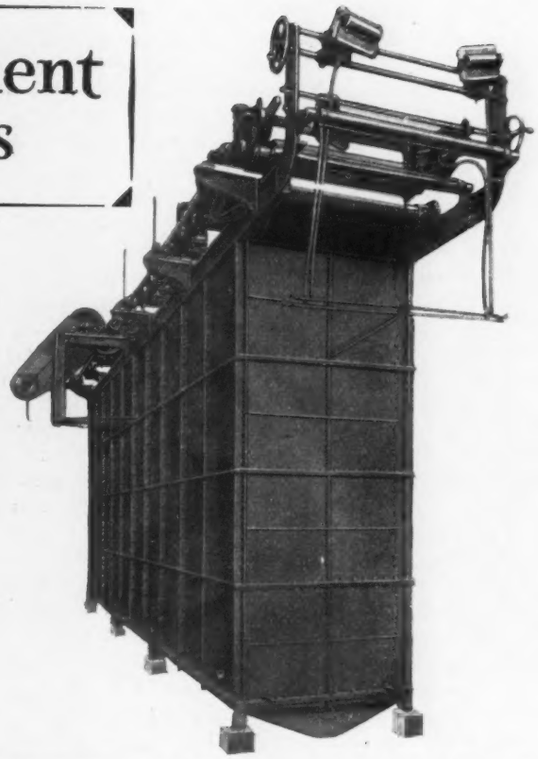
ATLANTA OFFICE
815 Atlanta Trust Co. Bldg.

COTTON PREPARATORY AND SPINNING MACHINERY

New Textile Equipment and Publications

BUTTERWORTH ANNOUNCES CONTINUOUS KIER.

A new kind of kier, one to operate continuously and for the processing of cloth in either open or rope form, has been announced by H. W. Butterworth & Sons Co., Philadelphia, Pa. This continuous kier is designed to provide a method for continuously and rapidly subjecting textile material, in flat web or other suitable condition, to a preliminary treatment comprising boiling in alkaline or other liquors, spraying and squeezing, which will cleanse a fabric and put it in a condition suitable for succeeding processes. According to the announcement, cloth may be put in the continuous kier in the morning, and be ready for the finishing room in the afternoon of the same day. It is further stated that with this new process, a string of cloth, either open or closed, leaving the gray room in the morning could be diastafored and boiled and ready for further processing within six hours.

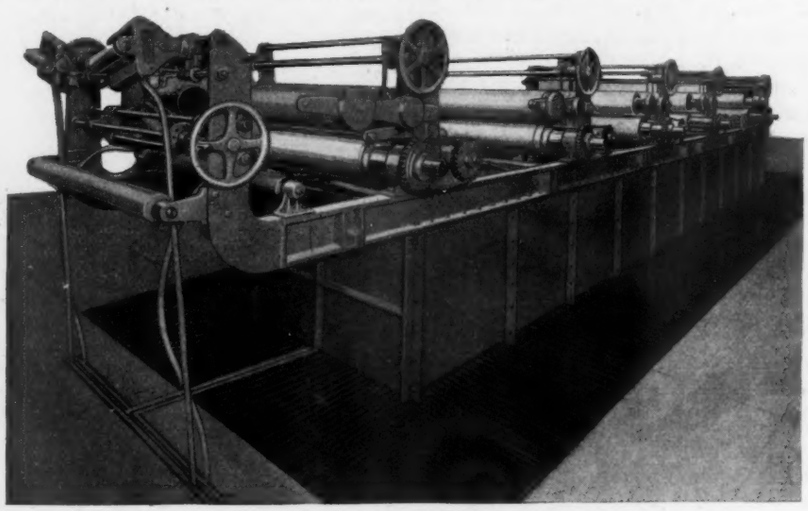


The drive side and entering end, showing Foxwell Guiders arranged for two open widths superimposed, of the new Butterworth Continuous Kier are shown here.

The new continuous kier, shown in the accompanying illustrations, is approximately 14 feet high, 5 feet wide and about 40 feet long. When installed, it is stated, all the operating mechanism is on the first floor, about 5 feet of the machine extending beyond the level of the second floor. There is an iron grating extending entirely around the kier.

In addition to the speed feature, the manufacturers point to other interesting features. The new continuous kier, it is stated, uses the liquor over and over again as long as it is usable, effecting economy; and cuts down the amount of chemicals necessary, it is stated, because the goods are completely absorbent and uniformly receptive. More even dyeing, it is pointed out, is secured through a uniform bottoming, all cloth being treated alike, for the elimination of motes, ticks and pectin matter.

It is further pointed out that in this machine the goods may be treated in a continuous manner with as many repetitions of the treatment as desired, and at different speeds as conditions may require. The fabric, between each spraying and squeezing operation, is subjected to a boiling in a weak caustic alkaline solution, for any predetermined period. It is further explained that the fabric can be subjected to kier action with caustic solution of whatever strength required, and may be boiled for different lengths of time in each solution as may be required, as while the operation, as a whole, is continuous. The machine handles all characters of cotton fabric in rope or open form, it is stated, the rope running side by side through the machine and in the open form, one piece superimposed upon the other.



Here the entering end, the upper section and the five sets of squeeze rolls of the Butterworth Continuous Kier are shown. The bottom part of the kier and drive mechanism are below the grating.

The company states that this machine is the result of several years of effort on their part, two machines having been installed in widely separated plants, after much preliminary experimentation in their development.

The new machine, they say, really marks a culmination of effort since 1800, as it was about that time that the first attempts were made to improve the method of kiering by running the goods continuously.

In addition to the features described, the Butterworth Company makes the further observation that the continuous kier method eliminates hand labor, and steeping bins which are not required where goods are processed in the open, a saving in width and a gain in breaking strength, and better fullness. The patent number is 1,741,338, and other patents are pending.

PONTACHROME AZURE BLUE B.

In a pamphlet recently published by E. I. Du Pont De Nemours & Co., Wilmington, Delaware, on Pontachrome Azure Blue B, a chrome color, the company gives the properties of this dyestuff, and also shows two samples of wool yarn dyed with this dye.

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WHITIN WORSTED MACHINERY.

Whitin Machine Works, Whitinsville, Mass., recently published an attractive little 32-page pamphlet, giving illustrations and calling attention to the features of the different machines included in the line of worsted spinning and twisting machinery carried by this company. The title of the booklet is Whitin Worsted Machinery.

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FACTS ABOUT FIRE INSURANCE.

In this neat little booklet, Facts About Fire Insurance, Lockwood Greene Engineers, Inc., 100 E. 42nd Street, New York City, present in brief form information about fire insurance that would prove of value to every property owner in protecting his interests. They state that the booklet does not presume to replace the service rendered by competent brokers but supplements this service by calling attention to matter for which the property owner, and not the broker or insurance company, is responsible.

—o—

CALDWELL STANDARDIZED SCREW CONVEYOR DRIVES.

H. W. Caldwell & Son Co., Chicago, recently announced Caldwell standardized drives for screw conveyors. They state that the new drive is made in two arrangements, type "C", which consists of two speed reductions from motor to screw conveyor, each through a high grade power transmission medium, and type "D", which consists of a direct coupled reducer, which type of drive permits the selection of a Caldwell worm gear reducer according to horsepower rating, without regard to the size of the conveyor trough on which the drive is to be mounted.

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TREND OF SALES OF SILK, RAYON AND COTTON.

Trend of Sales of Silk, Rayon and Cotton in the Drapery-Upholstery departments, is the title of a very attractive little booklet which contains the findings of the second study on this subject conducted by the National Retail Dry Goods Association. The Du Pont Rayon Company deserves special commendation for sponsoring this study and providing funds which made the work possible.

The report is based upon data secured in a survey made of a large number of the leading retail stores in the country and no doubt gives information that will prove of interest and value to those in any organization who merchandise and buy these lines of fabrics.

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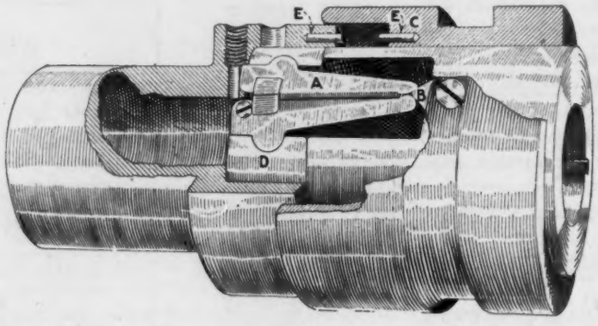
CARLYLE JOHNSON ANNOUNCES AN IMPROVED CLUTCH.

An improved clutch, known as the Super-clutch, has been brought out by the Carlyle Johnson Machine Company, Manchester, Conn. The manufacturers point out that in the past, carbon steel drop forged "clutch fingers" or "clutch levers" or "toggle levers," have been used; and that the new Super-clutch is equipped with chrome nickel steel fingers to increase further the wearing qualities and reduce breakage. Another improved feature is the installation of a method of "locking" the adjusting screw, by which, it is explained, the adjustment on any clutch remains where it is set, and the adjusting screw cannot loosen due to vibration, high speed, etc.

The company points to another improvement in the form of chrome nickel steel adjusting blocks—the heart of the clutch—to replace the tool steel adjusting blocks formerly used. The use of these, it is pointed out, eliminates breakage from fire cracks in the hardening of these parts.

Another feature explained is the Alemite system of lubrication used on the new clutch, requiring only one point of lubrication with grease, a result pointed to being an elimination of oil drippings, etc. Grease is forced into the interior of the clutch by the high pressure lubrication system used. A sectioned view of the clutch is shown in the accompanying illustration.



Johnson Single Clutch sectioned, showing chrome nickel steel adjusting blocks and adjusting screw lock in new chrome nickel steel fingers—"A".

—o—

"WHY THE DEMAND FOR A FINER RAYON?"

In a recent publication, a pamphlet entitled, Why the Demand for a Finer Rayon?, the Wildman Mfg. Co., Norristown, Pa., pointed out that today there is an increased demand for 34-cut rayon—a demand, they state, that will increase.

NEW MORSE DATA BOOK.

The Morse Chain Company, Ithaca, N. Y., state that in their new data book, Bulletin No. 38, they are offering to any man entrusted with the upkeep and maintenance of power drives, a very valuable document. "Here, in concise, readable form," they say, "will be found all the information needed to design, install and maintain Morse Silent Chain Drives."

The book also goes into the subjects of Morse Chain Speed Reducers and Morse Flexible Couplings.

—o—

CENTRALIZED HEATING WITHOUT STEAM.

Lee Air Heater Co., Youngstown, Ohio, have issued a booklet in which they give very complete information on direct hot air heating. They state that the development of this new system with fan circulation of warm air through ducts, has made possible the heating of large industrial buildings by warm air.

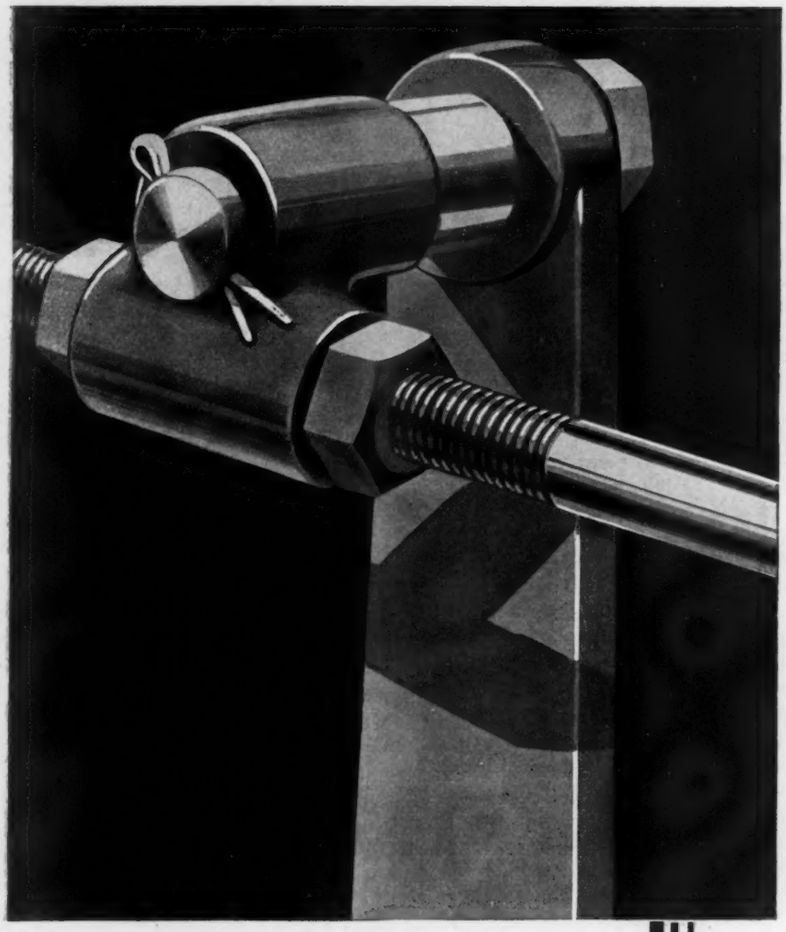
PAMPHLETS ON GUILDMODE HOSIERY.

Two elaborate pamphlets setting forth in detail the story of Guildmode hosiery have just been prepared by Hosiery Guild, Inc., according to a recent announcement by Harry L. Kinne, managing director. One is for use in retail establishments, and the other is for the purpose of pointing out to the consuming public the features claimed for Guildmode hosiery.

—o—

PARKSPRAY UNIT AIR CONDITIONER.

Parks-Cramer Company, of Fitchburg, Mass., recently put on exhibition at the International Heating and Ventilating Exposition in Philadelphia, a unit air conditioner of very compact and efficient design. They state that the total power required for this conditioner is only 290 watts, and that all the water consumed is evaporated. They also state that it handles 1500 cubic feet of air per minute, and will evaporate up to four gallons of water per hour.



"Lever Arms"--the vertical rods connecting lever feet to knife frame or brackets--are adjustable. Why? So that the knives can be quickly leveled without disturbing the lever stands. » » »

Again--simplification! One operation instead of two. That's where Halton stands out--in simplified performance. The largest mills value this feature. Learn more from our catalogue. » » » » »

THOMAS HALTON'S SONS,
"C" AND CLEARFIELD, PHILADELPHIA.
SELLING AGENTS
H. A. FORBES, PATERSON, N. J.
THOMAS S. CAPPER, INC., CHARLOTTE, N. C.
FRED H. WHITE, CHARLOTTE, N. C.

NEWS ITEMS *with a Textile Slant*

NEW COLOR HARMONIES IN INFANTS' AND CHILDREN'S UNDERWEAR.

It was recently stated in a news item from The Durene Association of America, that a rather novel introduction is to be made by Thomas Dalby Co., of new color harmonies in infants' and children's underwear. Hitherto couturier colors and seasonal shades in lingerie have been confined to high priced women's and misses' garments, or special-occasion silk garments.

—o—

"NYETTE UNDIE".

It was recently announced that the first retail showing of the "Nyette Undie," a new, high grade, knit product for women and misses, will be made by John Wanamaker of Philadelphia, as one of the leading spring offerings in their women's underwear department.

These garments are being produced by the Elliott Manufacturing Company, of Manchester, N. H., in accordance with a model designed by Edith M. Barrett, stylist of the Fashion Merchandising Bureau of New York City, who is to assist in developing new and individualistic styles and models of high grade knit underwear, lingerie, sun suits and bathing suits, the company states.

—o—

SCOTT & WILLIAMS COMPANY PURCHASE STANDARD-TRUMP BROS.

Scott & Williams Company recently announced the purchase of the Standard-Trump Bros. Machine Company of Wilmington, Delaware. Present plans call for the continuance of the Standard-Trump Bros. Machine Company as heretofore for an indefinite period.

—o—

PLANS OF DURENE ASSOCIATION.

"The primary objective of the new work of the Durene Association of America," said Mr. Starr, director and treasurer of the association, in an interview, "is to obtain general and thorough recognition of high grade mercerized cotton yarns as durene, and through such recognition to stabilize the present and future merchandising status of quality mercerized cotton."

"Wholesalers and retailers will not be slow to see," he said in continuing, "the disadvantage of fine, quality mercerized cotton being known merely as cotton, lisle or other inadequate descriptive terms, when prestige and standard quality may be defined by durene labeling and stamping."

—o—

TARPAULIN WITHSTANDS SEVERE BLIZZARD.

The accompanying photograph is interesting as showing the application of tarpaulin as temporary protective enclosures for newly poured concrete beams and columns, and for workmen on the interior of what is to be the world's largest building—The Merchandise Mart—in Chicago. The picture, showing work in process on one dome of the huge building, was made immediately following a severe blizzard, when for more than 48 hours, Chicago lay helpless in the path of the storm. Withstanding ripping, tearing gusts of wind, and bearing up under the added weight of snow and ice, the tarpaulin provided the required protection. A feature of interest is that these tarpaulins were sewn at the seams with the Union Special double lock stitch, in which each stitch is twice locked, independently of adjoining stitches. Throughout the extreme conditions mentioned, it is stated that there were no failures of the seams in these tarpaulins.

—o—

This tarpaulin allowed workers to continue on the job during a recent severe blizzard in Chicago. Work on this building, the Merchandise Mart, could not have continued without this protective covering.

CLEMSON ADDS NEW KNITTING EQUIPMENT.

It was reported that due to the fact that the Clemson Textile School has had several calls for men trained in knitting, the school now has plans under way for developing the knitting division of the department. The following new machines have been recently installed: 1 Fidelity selvage welt ribber 220 x 3½; 1 Fidelity French welt ribber 240 x 3½; 1 Brinton trick wheel machine for golf hose; 1 table of Stetten electric hosiery forms; and 1 Oswald Lever winder for preparing rayon.

—o—

CANADA MILLS TO TAKE MEMBERSHIP IN HOSIERY GUILD, INC.

It is said that the result of a meeting of Canadian mill men which was recently held in Hamilton, Ontario, pointed to the fact that a majority of the circular knit hosiery manufacturers of Canada will eventually take membership in Hosiery Guild, Inc., and join in the effort to promote women's fine gauge silk hosiery without seams under the name GuildMode.

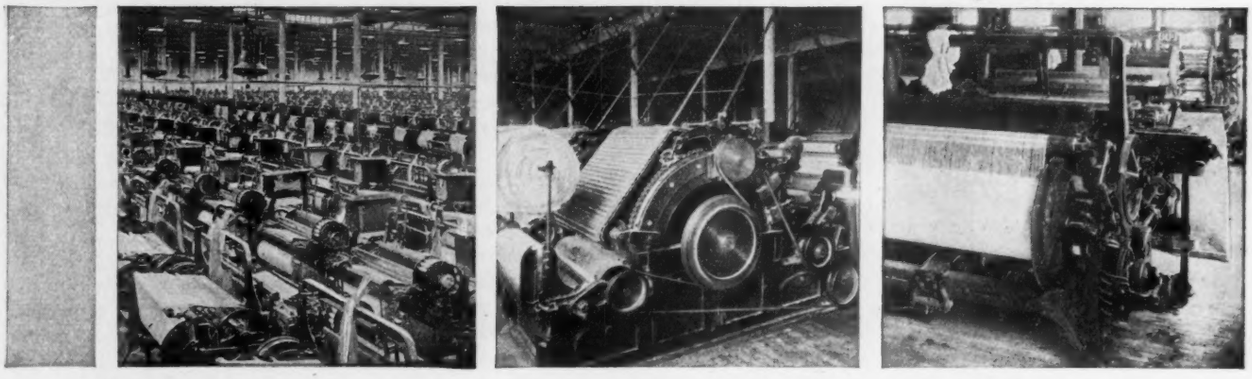
—o—

NEW MANUFACTURING PLANT FOR SCOTT AND WILLIAMS, INC.

Lockwood Greene Engineers, Inc., of Boston, Mass., have been engaged by Scott & Williams, Inc., of Laconia, N. H., to design and supervise the construction of a manufacturing building, 270 ft. x 63 ft., 4 stories high, to be used for the manufacture of knitting machinery, the building to be of re-inforced concrete.

—o—

For the length



# of its natural life---

That's how long Texaco lubrication will preserve your equipment. Textile machinery *never wears out* when it is effectively lubricated. But long before it becomes obsolete, unless it *is* effectively lubricated, power losses, high maintenance costs and replacements rapidly eat into profits. ¶ Keep your equipment to the top notch of operating efficiency throughout its natural life. Texaco lubricants, with Texaco Lubrication Service, will help you. The profits of many a mill are lost through out-of-date lubrication. ¶ The Texas Company has more than kept step with the advances in textile machinery. Texaco engineers are watching every move—constantly studying lubrication "first hand" from actual experience in the mill—improving lubrication methods—providing specialized Texaco Lubricants to anticipate every need. The benefits are yours for the asking. Write The Texas Company first.

TEXACO
REG. U.S. PAT. OFF.

THE TEXAS COMPANY
17 BATTERY PLACE, NEW YORK CITY

TEXACO Lubricants

POSSIBILITIES OF LACES.

The subject of a very interesting address recently delivered by Miss Edith M. Barrett, stylist, was "Laces and the possibilities they hold for greatly increased sales during 1930." Miss Barrett discussed at length the greater attention now being paid to laces in various forms both in this country and abroad, and illustrated her talks with garments made wholly of or trimmed with lace, including dresses and a three-piece ensemble comprising chemise, nightgown and negligee.

—o—

ELASTIC FABRICS MADE OF DUPONT RAYON.

A display of elastic fabrics made of du Pont rayon was recently featured in a Boardwalk window at the du Pont Products Exhibit at Atlantic City. A descriptive display of crude smoked rubber, hanks of thin rubber thread and twists of rayon yarn in various colors was an interesting feature of this exhibit.

—o—

BRISTOL CO. OPENS NEW SALES OFFICE.

The Bristol Co., manufacturers of Bristol's recording instruments, located at Waterbury, Conn., recently announced that they had opened a new sales and service office in Los Angeles, Cal. S. W. Case has been appointed district manager, and W. H. Rogers, sales and service engineer.

—o—

LARGEST NET PROFITS.

The largest net profits from operation in its history were recently reported for the year ended December 31, 1929, by the Celanese Corporation of America in its annual report. The report showed that the company's net profit from operations was more than $5,000,000 during the past year.

—o—

GENERAL REFRACTORIES COMPANY MAKE AN ANNOUNCEMENT.

General Refractories Company, Philadelphia, recently announced that they had acquired all of the refractories properties of Evens & Howard Fire Brick Co., of St. Louis, Mo. The purchase includes not only the refractories plants and business of Evens & Howard Fire Brick Co., but also its vast and important clay lands in Missouri and Georgia.

—o—

RAISING TURKEYS UNDER CANVAS TENTS.

Raising turkeys under canvas tents is one of the new methods of poultry farming just reported to The Cotton-Textile Institute. It is stated that experiments during the past year have proved so successful that important advantages in raising poultry in this way are indicated.

—o—

TEXTILE STUDENTS IN DEMAND.

Clemson College Textile School, Clemson College, S. C., recently stated that they had a number of positions open in Europe and South America and will be glad to hear from graduates of wide experience in weaving rayon with cotton or silk, as well as men with a more general experience in rayon knitting, etc.

—o—

DURENE APPOINTS NEW FASHION ADVISOR.

Miss Kathryn I. Day has joined the newly created staff of the Durene Association of America as fashion advisor and assistant to E. L. Starr, director and treasurer of the association, Mr. Starr recently announced.

—o—

INDIVIDUAL MOTORS.

Individual motors and motors for group drives for the various machines have replaced the system of large power units in most mills, according to speakers at the Textile Forum of the National Association of Cotton Manufacturers in the Boston City Club recently.

—o—

MASON REGULATOR APPOINTS NEW DISTRIBUTORS.

King & Shepherd, 50 Church Street, New York City, were recently appointed distributors for the Manhattan district, of the Mason Regulator Company, general offices and plant Dorchester Center, Boston, Mass. They state that the line consists of all the newest developments in pressure control apparatus.

—o—

DURENE APPOINTS EDUCATIONAL WORKER.

Miss Grace Walton, for five years training director of Strawbridge and Clothier in Philadelphia, and former advance woman for the Western Fashion Show division of The Rayon Institute, has been appointed by E. L. Starr, director of the Durene Association of America, to head a program of educational work for that organization.

—o—

TUBIZE ANNOUNCES MERGER WITH AMERICAN CHATILLON.

At a meeting of the stockholders of the Tubize Artificial Silk Company of America, the project to merge the company with the American Chatillon Corporation was approved by a large majority of the stockholders. The new company will be called Tubize Chatillon Corp.

—o—

BLUE, GRAY AND RED NOW RANK HIGH IN COLOR SCALE.

Blue, gray and red will rank high in the color scale of fashion this season, according to Miss Thelma Roberts of The Cotton-Textile Institute.

—o—

GUILDMODE TO CONDUCT ADVERTISING PROGRAM.

It was decided recently at a closed meeting of the executive committee of Hosiery Guild, Inc., that they would launch during the month of April the first part of their consumer advertising program in the interest of GuildMode Hosiery. The committee, it is stated, also ratified without change the quality specifications previously drawn up to govern the production by members of 300, 320 and 340-needle stockings without seams carrying the Guildmode label.

—o—

TEXTILE RECORDER YEAR BOOK.

The 1930 edition of the Textile Recorder Year Book has been issued and is being distributed by the publisher, John Heywood, Ltd., Deansgate, Manchester, England. This annual publication contains almost 1000 pages of technical and other material related to textile manufacture. Among the chapter headings are: Raw Materials; Cotton; Hosiery Manufacture; Woolen and Worsteds; Flax, Linen and Jute; Raw Silk; Waste Silk, Rayon; Fuel Economy; Etc.

—o—

YEAR BOOK OF TEXTILE MANUFACTURER.

The 1930 edition of "The Textile Manufacturer Year Book" has been issued by Emmott & Co., Ltd., 65 King Street, Manchester, England. This is a comprehensive reference book published each year by the English publication named, and contains more than 500 pages of technical material relating to various phases of technical manufacture.

—o—

COTTON AND ITS RELATION TO FASHION.

Cottons this year have the color, texture and design that make them "lovelier than ever," according to Miss Thelma Roberts of the Cotton-Textile Institute who recently broadcast a talk on fashion. "And thanks to American zeal and research," she went ahead to say, "colors that are fast to both sun and tub are now available, which is some item in itself."

MEET THE MOREHEAD ENGINEER . . . .

. . . he can show you that NOT removing condensation promptly is raising your operating costs . . . . . .

Moreover, 37 years of world-wide experience in improving steam drainage and boiler feeding in plants of every type, qualifies The Morehead Engineer to assist you in MANY ways. Let him tell you the Morehead story—and show you how the Morehead Back-to-Boiler System can be profitably installed in YOUR plant.

Give careful consideration to these eight important services performed by the Morehead Back-to-Boiler System. They will help lower your plant operating costs:

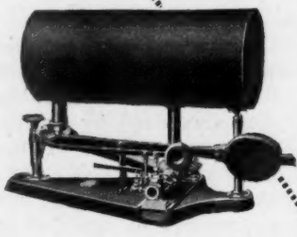
1. Drains all kinds of steam-heated apparatus . . . *immediately* and *thoroughly.*
2. Enables steam-heated apparatus to work at full capacity, thus *increasing production* and *improving quality* of product.
3. Handles water of condensation at any temperature — 212° and above — the higher the better.
4. Automatically *returns* all condensation to boilers at *original high temperature* . . . thus saving valuable heat units in excess of 212° F.
5. Supplies the boiler with pure, hot, distilled feed water which deposits no scale, and, in addition, acts as a most efficient boiler compound in purging the boiler of accumulated scale and dirt.
6. **Uses only ten per cent of the steam that is required by a pump doing the same work.**
7. Eliminates need for a lifting pump, taking the place of such a pump and operating as simply as the law of gravity.
8. Definitely insures *fuel savings* and *lower operating costs.*

MOREHEAD MANUFACTURING CO.
Department C DETROIT, MICHIGAN

After Others Had Failed

Proof That The Morehead Engineer Performs A Real and Lasting Service: "Prior to buying your equipment we had twice been sold on the idea of our steam being returned to the boiler by installations to which we consented. We believed that nobody could sell us again. Therefore, the salesmanship of your representative who sold us the Morehead Back-to-Boiler System had to be of a very high order to get us to put in any equipment whatever. We are now glad to say that he did not overstate his case and we are very much pleased with your equipment. We are pleased to hand you a check herewith in full payment."

D. T. Riley, Riley Penn Oil Company, Burlington, Iowa



Morehead
Back to Boiler
SYSTEM

(441)
MOREHEAD
MFG. CO.,
Dept. C
Detroit, Mich.

I'd like to have your interesting 44-page booklet, giving helpful information regarding the Morehead Back-to-Boiler System. This will, of course, place me under no obligation.

Name _____
Company _____
Address _____
City _____ State _____

NOTES ABOUT MEN YOU KNOW OR KNOW ABOUT

Walter J. Single, who for the past three years has been in charge for the Westcott Hosiery Mills, of Dalton, Ga., of licensing its "seamless shaped foot'" to hosiery mills throughout the U. S. A. and Canada, has been appointed executive assistant sales manager with full direction of salesmen, territories, and accounts for both the Fabrimode and Mode-Modeled divisions.

F. E. Harrell has been appointed engineer in charge of drafting and experimental departments of the Reliance Electric & Engineering Company, Cleveland, Ohio, manufacturers of alternating-current and direct-current motors.

Charles K. Bryant, who for the past eleven years has been manager of the textile repair department of Michael & Bivens Co., Gastonia, N. C., has bought out the company and will now operate it as the Bryant Electric Repair Co.

A. F. Macintyre has been elected treasurer and general manager of the Fitzgerald (Ga.) Cotton Mills. The other officers of these mills are: F. W. Jefferson, president; and B. H. Beall, secretary.

Charles Walker, who until recently was superintendent of Trion (Ga.) Co., has been appointed assistant superintendent of the Southern Mfg. Co., Athens, Ga.

J. W. Garrett, overseer of carding at the Catherine Mills, Sylacauga, Ala., was recently transferred to a similar position with the Sycamore (Ala.) Cotton Mills.

E. C. Malone, of Rome, Ga., who until recently has been representing Iselin-Jefferson Company, New York, in the Georgia and Alabama territory, now has charge of the Carolinas territory also.

George Cornelson recently resigned his position as secretary of the Lydia Mills, Clinton, S. C., to accept a position with the Spartan Mills, Spartanburg, S. C.

J. F. Chalmers, who for the past three years has been associated with the Fort Mill (S. C.) Mfg. Co., as superintendent of Mill No. 2, recently resigned his position to accept a position at Greenwood, S. C.

H. E. Harden, formerly overseer of night spinning at the Shelbyville (Tenn.,) Mills, has accepted the position of head of the twisting and winding departments of the Atlantic Cotton Mills, Macon, Ga.

N. A. Long was recently made head of the dyeing department for the Beacon Mfg. Co., Swannanoa, N. C. Mr. Long, who is a graduate of North Carolina State College, was formerly with the Du Pont Company, at Charlotte, N. C.

Edward V. Peters, vice-president in charge of sales, and a director of the Tubize Artificial Silk Company of America, Inc., recently resigned that post, it is reported. Mr. Peters was elected a director and vice-president in charge of sales in June, 1926, and has served in that capacity ever since. It is said that his sales record during that period is considered one of the most successful in the industry. Mr. Peters began his business career back in 1901 when he became associated with the Manhattan Elevated Railroad.

W. B. Lawson, at the annual meeting of the Harshaw Chemical Company, Cleveland, Ohio, was elected a director of that company, and at the organization meeting of the board of directors he was elected a vice-president. He will become active in the affairs of the company immediately.

J. T. Wharton recently resigned his position as overseer of spinning at the Martha Mills, Thomaston, Ga.

Leprelet Logee, who at one time was superintendent of a cotton mill in Macon, Ga., and was later associated with the Whitin Machine Works, Whitinsville, Mass., celebrated his 104th birthday anniversary at the Masonic Home, Charlton, Mass., on Feb. 5.

Otto Seyfert, of the Seyfert & Donner firm in Chemnitz, Germany, manufacturers of high speed, full-fashioned hosiery machines, made a visit to Robert Reiner, Inc., American selling agent, during the month of February.

Jokichi Takamine, Jr., president of the Takamine Laboratory, Inc., Clifton, N. J., manufacturers of Polyzime "P", died on February 22nd as a result of injuries sustained in an accident in New York City. He had built the business of the company from small proportions to the prominence that it now enjoys.

Herbert Midgley, president and general manager of Howard Bros. Manufacturing Co., of Worcester, Mass., recently made a visit to the South to spend several weeks with Guy Melchor, Sr., and Jr. He was accompanied by Mrs. Midgley.

R. P. Snelling of Boston, Mass., vice-president of the Saco-Lowell Shops, visited the southern office at Charlotte, N. C., during the month of March. He was enroute north after a visit to Aiken, S. C.

Erwin N. Darrin, vice-president and assistant agent for the Draper Corporation, Hopedale, Mass., recently made a southern trip.

E. Kent Swift, treasurer of the Whitin Machine Works , Whitinsville, Mass., was recently elected president of the Nyanza Mills, Woonsocket, R. I., succeeding John W. Farwell.

Joe Kirby, who until a short time ago was located at Lowell, N. C., is now overseer of weaving at the Langley, (S. C.) Cotton Mills.

J. M. Milton, formerly of Gadsden, Ala., is now overseer of spinning at the Martha Mills, Thomaston, Ga.

J. Norman Pease, manager of the Charlotte, N. C. office of the Lockwood Greene Engineers, Inc., was recently chosen president of the Southern Manufacturers Club, of Charlotte.

A. B. Cross was recently made general superintendent of the Rock Hill (S. C.) Printing & Finishing Co. He was succeeded by Joseph Roberts as superintendent of the printing department.

S. L. Jenkins recently resigned his position as overseer of weaving at the Scottdale (Ga.) Mills to accept a similar position in Thomaston, Ga.

BARBER-COLMAN

will
EXHIBIT
at
BOSTON

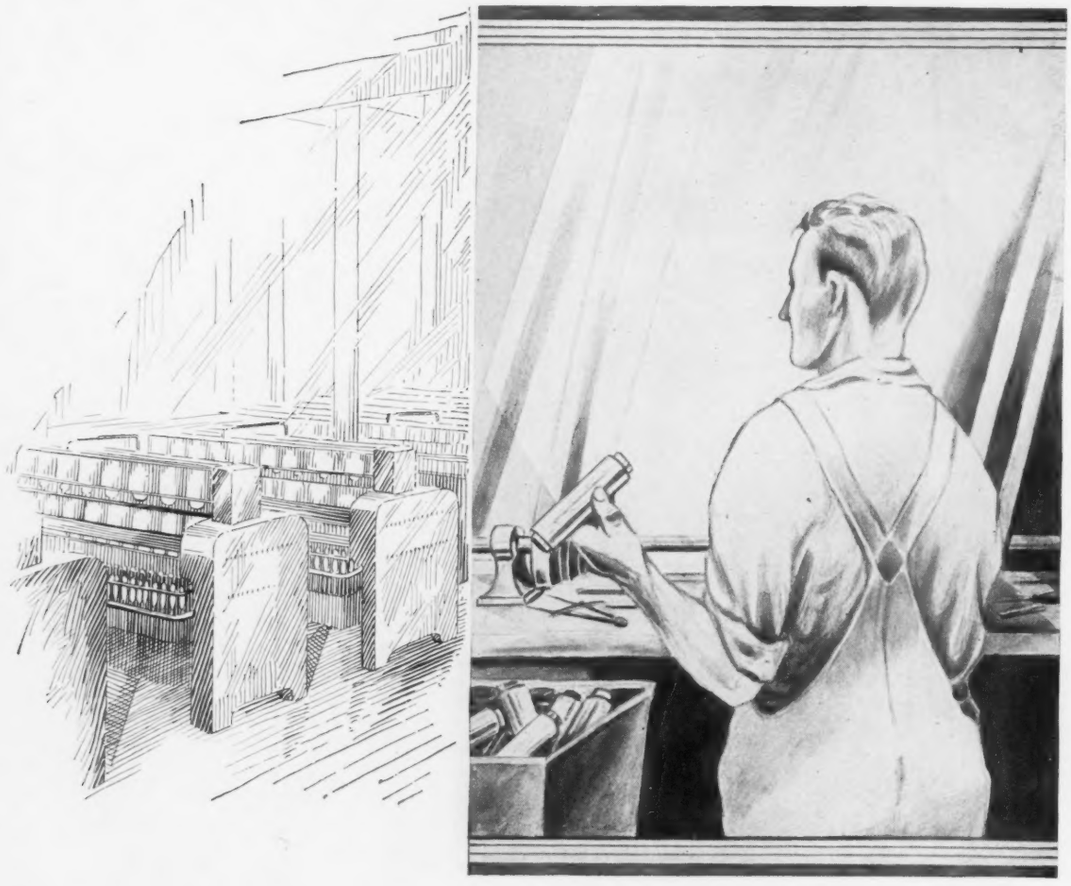
The
AUTOMATIC SPOOLER
The
HIGH SPEED WARPER

The International Textile Exposition will be held at Boston in the Mechanics Building from April 28th to May 3rd of this year. Barber-Colman Company will be among the exhibitors with an operating display of the Automatic Spooler and the High Speed Warper. We hope that every cotton mill executive who wants to know more of the details of operation of these units will visit us at the Exposition, because we want every interested person in the country to see our machines and to realize the advances in cotton processing made possible by their use. An investment in Barber-Colman automatic spooling and high speed warping equipment pays for itself in many ways. These machines are used today in more than 100 leading cotton mills in this country and abroad, giving satisfaction to the owners and employees, improving the quality of the product, and making for more and better production in the weave rooms. The essential reason for the success of this unusual development is the fact that the yarn is handled at high speed with low tension, thus preserving its natural elasticity. Come to the "Boston Show" and see the equipment in action. See how it makes "Every Knot A Weaver's Knot," and see the savings and satisfaction you can obtain.

BARBER-COLMAN COMPANY

General Offices and Plant
ROCKFORD, ILLINOIS
GREENVILLE, SOUTH CAROLINA FRAMINGHAM, MASSACHUSETTS

PROTECTION



SWIFT CHANGES in styles, colors, patterns,—in machinery, plant lay-out, and manufacturing processes. New methods of buying, selling, merchandising. These fast changing conditions make necessary a source of supplies equal to any emergency . . . The entire U S organization is alert to these challenging factors; its experience, craftsmanship, research, and responsibility offer you a decided protection,—needed today as never before. There's a neighborly U S expert within easy reach of your telephone . . . for Bobbins, Spools, and Shuttles call U S

Founded in 1857

U S BOBBIN & SHUTTLE COMPANY

MANCHESTER, N.H.
EASTERN DIVISION
MANCHESTER, N.H.~GOFFSTOWN, N.H.
LAWRENCE, MASS.
WILLOUGHBY, VT.~PHILADELPHIA, PA.

MONTICELLO, GA.
JORDAN DIVISION
GREENVILLE, S.C.
MONTICELLO, GA. DUBLIN, GA.
JOHNSON CITY, TENN.

AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living

Some More Random Thoughts

AT TIMES it seems that OLD-TIMER gets a little obstreperous, and takes liberties with our good nature. But we're broadminded, and since this is his page, we usually let him say what he wants to say on it, up to a certain point.

In view of our argument with him, which he reports this month (in part only), we are going to submit some questions to you, and we hope you will answer them:

(1) *Regardless of his peculiarities, does* OLD-TIMER *always give you food for thought? Do you always get some good meat and help and inspiration from his articles?*

(2) *Would you like to have* OLD-TIMER *continue his inspirational articles for a while, or would you rather have him visit* JIM *soon? If you want another* JIM *article, what subjects do you want to have discussed?*

THE EDITOR.

JUST WHY is it, Bob—(I'm still talking to that Editor. In fact, that's about the only way I can get him cooled down when he's rapping on me when I get a little behind. I just talk so darned fast he finally leans back in that old chair and takes out his pipe. Then I know I've got him. He'll let me rave on until he just naturally gets so tired he will not talk back.) As I was saying—

Why is it, Bob, that a human being will spend his life working like a Turk to learn all about automobiles, or steam engines, or electric motors, or looms, or spinning frames, etc., and center his whole mind on the intricacies of a cotton mill or a business of any kind, and never really know very much about *himself?* Remember that OLD-TIMER article about "Know Yourself"?

Yes, OLD-TIMER, *I remember that article very well, but it didn't interest me very much. In fact, we didn't have very much response from the readers about it, and therefore let it pass out of mind.*

Yea, that's what's the matter with most of you Editors. If I had told you a way to set a card that would give a cleaner web, or a little more breaking strength in the resultant yarn, you would have patted me on the back and said, "That article was great, OLD-TIMER. Here's a bunch of letters from overseers or superintendents saying they had gotten one more turn on the front roll, or something, by adopting that idea."

Well, what are you driving at anyway, OLD-TIMER? *Isn't that my job? Aren't we running a textile magazine for the purpose of helping our subscribers to improve their jobs? Haven't I told you time and time again that it is our ambition to edit* COTTON *so it will be a clearing house, so to speak, for the troubles our subscribers have, so they can call on us for information of any kind pertaining to their jobs, so our subscribers will at all times be kept abreast of the most modern thought and methods of manufacturing? That's why I spend so much time going to all the textile meetings, so we can give the results of these meetings to the men who are too far away to attend them. And right here, I want to explain a point to you: Many men who do attend the meetings get back home and attempt to put into effect some idea they heard discussed, and can't remember every detail of the discussion, or, as is oftentimes the case, they misunderstood some part of it. Then all they have to do is pick up* COTTON *and go over the whole thing again, just as it was discussed at the meeting, and thereby get the details correct.*

Here, have a light, Bob! Your old pipe has gone out and you're almost out of breath, and you've made me forget what I was going to talk about. And, by heck, whose page is this, anyway? What are you trying to do—hog my page?

Well, go on if you've got anything to say, but don't—

Just a minute, Mr. Editor. I meant no reflection on your work or anything like that. I intended to ask you only a simple question. Therefore, keep your sus-

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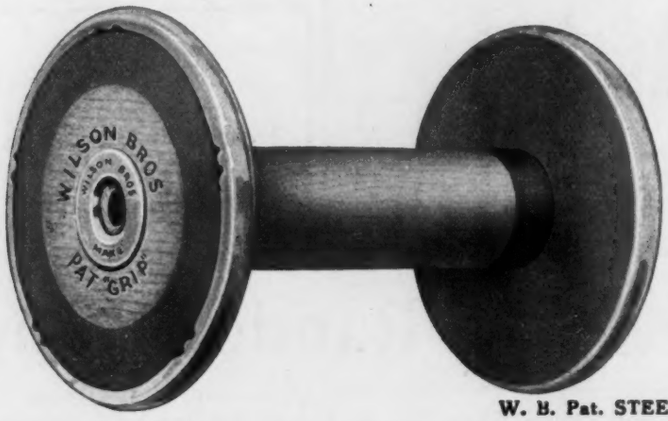

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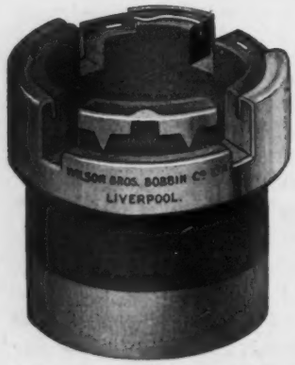

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penders on and give me a chance to get a word in edgeways. Anyway, if you'll read that OLD-TIMER article on "Know Yourself" again, I think you will get more out of it than you did before. (This article appeared on page 901 of the June, 1929, issue of COTTON.)

I claim a man should mix it up a little—that is, he should study himself as well as his work, his business. Do you know yourself?

Who, me?

Oh, the dickens, no! You know everything, I suppose. Most Editors do. Anyway, I wasn't talking to you, and your old pipe is out again. Keep quiet, and let me get this thought off of my mind:

Some big guy once said,

You are the Center of Your Universe.

Them's big words, Bob, and after all these centuries of scientific study and study of human beings, it is still the great mystery. In fact you can't get away from the fact that almost all human beings are more or less superstitious, most of us try to make out that we are not. In fact, we are ashamed of it, but we are still superstitious just the same.

Interest in *self* is the whole key to what a man can accomplish. Yes, I know some people say that a man is an egotist who has a marked interest in self. That he is big-headed or something like that. If "egotist" means a person interested in self, it includes practically all great men. Roosevelt was called a great egotist, but he is quoted as saying, "It is better to wear out than to rust out," and that is talking about yourself like you were a tool of some kind, or a machine at the service of mankind. Then it really was egotism that made our great men world figures.

Study yourself, brother; take stock of yourself. What are your weak points? What are your strong points? How can you make the strong points stronger, and correct the weak points? Can you get work out of your employees without antagonizing them? Can you get things done without causing a whole bunch to quit? Do your section men co-operate with you? Do you co-operate with your employer, be he overseer or superintendent or manager or president?

Are you considered a "grouch" or "stuck-up" by the people you come in contact with? Does it get you anything, are you more successful, by being a grouch?

Do you make friends by being a grouch? You know how to run a room or a cotton mill; now, wouldn't you be even more successful if you really knew *yourself?*

* * *

What Do You Think?

There is no way I have ever been able to figure out by which labor can avoid paying the cost of waste—what I mean is abuse of property, such as breaking out glass, putting on new parts of machines, etc., when a little work would make the old part give as good service. If labor really understood this, would they be more considerate, more economical?

Or, to say it in another way, take a weave room of 1,000 looms. It will probably require $8,000 worth of supplies to run it for a year. Now, if it takes ten loom fixers to run those 1,000 looms, that is $800 per fixer per year, how much of this could he save if he got 50 cents of every dollar he saved, and save the company 50 cents? Think it over, and tell the other readers of COTTON what you think.

* * *

How About It?

Years ago, when the 10,000-spindle mill was considered good-sized, and the 25,000-spindle mill was one of the big ones, the successful overseer, superintendent or manager was successful because he knew how to set the machinery for best results, and because he came in direct personal contact with all the operatives, and his personal management was reflected in everything about the plant.

Now, since we have 100,000-spindle mills and 200,000-spindle mills, and groups of mills under one head, the successful overseer, superintendent or manager is successful because of the organization he has built up, and his ability to pick men and work with them in a way to obtain their loyal co-operation.

* * *

Just What is Luck?

Guess you remember the article OLD TIMER wrote about "luck." I heard a fellow "gassing" the other day about how a certain man who had just been promoted, always seemed to play in "luck." It so happened that I knew the man who received the promotion and have been in close touch with his work for several years, so I replied to the gentleman about this way:

"Yes, when I was a young man like you, I saw how 'luck' seemed to just run over some people and I began to make a study of these people. After several years of careful observation I decided that to be 'lucky' enough to get promotion, all an overseer or superintendent had to do was to:—

"Be on his job every minute with that asme 'pep' that he had when the job was first given to him.

"Instead of loafing with the crowd, stay at home nights and apply himself earnestly to a study of text books and textile magazines, not only to keep himself up-to-date but to be prepared for the bigger job when it came.

" 'Beat the other fellow' in production; make less seconds; have better help by training them better; command more loyalty from employees by being loyal himself and absolutely square in all his dealings with them.

"When told and shown by his employer how certain things must be done—to keep on doing those things and not have to be told and shown again in a few months.

"Instead of trying to 'pass the buck' when things go wrong, shoulder the responsibility he is responsible for and go at his work with the determination to prevent a recurrence of the fault."

The lucky man must work when the unlucky man loafs; hold his nerve when the other fellow loses his; plan and study and keep everlastingly at his job when the other fellow didn't give a damn.

Oh! yes, it is easy, pardner—you just do the things the lucky man does and you will be *lucky* too.

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HOW OTHER MEN MANAGE

Practical Discussions by Cotton's Readers On all varieties of Mill Subjects

Preparing Warps for Belting Duck.

This man asks a number of questions which readers with experience are invited to answer.

EDITOR COTTON:

We have a problem with reference to preparing warps for weaving belting duck which we should like to submit to the readers of your "HOW OTHER MEN MANAGE" department. We should be glad to have full information concerning this subject, and I will outline some of our conditions.

Our warp yarn number will be 7s/7, or other combinations to be the equivalent of approximately 1s yarn. Our twister spools are 8×5. The cloth to be woven is 60-inch, about 28×19. There will, therefore, be about 1,680 ends on the loom beam. We have a warp compressing machine, which will turn out a beam 62 inches between the heads.

There are two main points upon which I should like to have the experience and opinion of your readers experienced in duck manufacture.

First, under the conditions outlined, I should like to know whether it would be better to make the loom beam on the warp compressing machine direct from spools or other packages in a creel back of it; or whether it would be better to warp the yarn from creels onto section beams, and then double several of these warps into a loom beam on the warp compressing machine.

Assuming first that the preferred method is to make the loom beam direct from the spools on the warp compressing machine, I should like to know which type of creel is best to use, and any other information as to the best means of bringing the yarn to the tension rollers on the warp compressing machine, how the yarn should be threaded; whether split rods should be used; and how many ends to the dent.

The cuts of cloth are to be 300 yards, less contraction, and I should like to know what size of loom beam would be the best to use under these conditions. If your readers prefer the method indicated of warping the loom beam direct from spools, I should be pleased to have them indicate in full their reasons for recommending this.

Now assuming that it is preferable to put the warp on section beams on warpers, and then double these into a loom beam on the warp compressing machine, I would be glad to have the reason why this is better. Also, under the conditions outlined, I should like to know the best arrangement concerning how many section beams should be used, how many ends should be put on the section beams, and how these should be run on the warp compressing machine. For instance, would it be advisable to run five section beams of 336 ends each or six beams of 280 ends? How should these ends be run, that is, how many in a dent?

Furthermore, in connection with this second method, I should like to know what is the best method of controlling the tension on each individual end, that is the ends from each individual section beam; and I would also like to know whether it is better practice to run these different sheets all over, without touching until they reached the tension rolls, or whether the usual method used on slashers, that is over and under, is better.

I believe that is all we have to ask with reference to the two different methods described, and I should be pleased to have readers go into detail, with whichever system they recommend under our conditions, and explain their reasons, and give any other information that would be of value.

Now, considering the question as a whole, there are several questions I have to ask: (1) What grade of cotton should be used for this work; (2) what twist per inch in spinning, and what twist per inch on twisting; (3) on the compressing machine, is it better to use clamp or gummed tape on the end of the loom beam; (4) on the warp compressing machine is it better to run the beam over or under? Also, I should like to have opinions as to when the splitting rods should be inserted, and the best type

We invite our readers to make use of this department for the discussion of any and all problems arising in the mill or the finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statements of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

Attention, "J. A. (Maine,)" "T. R. C. (Charlotte)", et al.

OCCASIONALLY we receive letters for this department in which the writers do not supply their names and addresses. While this information is not published, it is necessary that we know the identity of correspondents, as a matter of record and an evidence of good faith; otherwise the contributions cannot be published.

Accordingly, if the correspondents signing recent letters as "J. A. (Maine)", and "T. R. C. (Charlotte)," will advise us of their correct names and addresses, we shall be glad to publish their letters; otherwise, their communications must be ignored.

This notice is published also to remind other correspondents of this rule. We repeat that the names are not pulished, but that we must know this inormation before acting on any contribution.—Editor COTTON.

of comb to use on the compressing machine under these conditions.

CONTRIBUTOR NO. 4710.

What Causes This "Fuzz" on Sheeting?

An unusual inquiry upon which we shall be glad to have the opinions of men with this experience.

EDITOR COTTON:

I have a question which I would like to submit to the readers of COTTON. We are running sheetings, 68x76, 21s warp and 25s filling. The widths range from 49 inches to 90 inches.

The trouble we are having is that when this cloth is taken from the loom, it has a lot of what we call "fuzz" on the face and back. We can wet our hands and rub the cloth, and it will roll up in little balls. It takes this effect after it is bleached, or after being washed at the laundry.

Our sizing formula and method is as follows: 52 gallons of water, 135 pounds of starch, 5 pounds of tallow, 10 pounds of gum. We cook for one hour and thirty minutes, add 57 gallons of water and boil 20 minutes. The size is cooked in the basement and pumped to the top floor to the slashers. The staple of the cotton is about 1 to 1⅛-inch, with a lot of fly in it.

I should appreciate suggestions from your readers as to what might be causing this trouble, and any ideas they might have as to how it could be corrected.

CONTRIBUTOR NO. 4705.

Why Is This So?

Here are some questions which some of you weave room men can answer; and an idea which you maybe can use.

EDITOR COTTON:

I would certainly like for someone to explain to me why it takes longer to weave one three-cut roll of cloth than it does to weave three one-cut rolls. On this particular cloth, which happens to be 40-inch, 3.60 yd., 56x60 goods with 21.50s warp and 26.00s filling, I have noticed that it takes a weaver seven days to weave a three-cut roll, while he can weave three one-cut rolls in 6½ days. Both the three-cut and the one-cut rolls are woven on the same kind of loom and with the same kind of let-off and take-up motions.

I believe this is due to one of the following causes:

If a weaver starts two looms at the same time, one with a one-cut roll on it and the other with a three-cut roll on it, and the two looms stop at the same time, assuming the two looms are placed side by side, the weaver will always start up the loom with the one-cut roll on it first. He does this because he knows that it will be seven days before the three-cut roll will come off and that he will get three one-cut rolls off five hours sooner, so he keeps the loom with the one-cut roll on it running more than the loom with the three-cut roll on it.

I also believe that the weight of the three-cut roll has some bearing on the question.

In passing, I might mention that we have an electric iron in our cloth room for ironing out the turn downs that are made while running the cloth through our machines, which saves us the cost of running the cloth back through the machines. What I mean by turn downs is where the selvages of the cloth get turned over or under.

CONTRIBUTOR NO. 4706.

Oiled Raw Stock.

Disagrees with "Wash" as to the merits of oil spraying, and gives some interesting experience in this connection. Also card settings.

EDITOR COTTON:

The writer was deeply engrossed by an article written by "WASH (R. I.)," which appeared in the September issue under your "HOW OTHER MEN MANAGE" column. His treatment of the subject on the breaking strength of yarn and the oil spraying of cotton was quite erroneous in places, according to my opinion and the judgment of others with whom I have discussed it.

"WASH" states that if one understands his business he can set up his cards so that there will be little or no fly. Any card grinder could have told him this, but he was deviating from the fundamental principles of spraying raw cotton with oil. If the card is set up to take out little or no fly and dust, of course his yarn will contain an excess of foreign matter for the simple reason that the motes, boll, stalk and leaf can find no exit from the card. The purpose of the oil is to form a cohesive action between the cotton and the longer fly that is generally taken out on the cards. With the cotton holding the better grade of flyings in this manner, the card can be set so as to remove all foreign matter, leaving all of the workable stock.

From an actual experiment, I found that 1.2 per cent of cotton was regained, that the average length of staple was totally unchanged, and that the flat strips were a trifle less when spraying the stock with oil than when using un-oiled stock. We also gained an average of 1.3 pounds better break in our yarn with oiled stock than with the unoiled stock. We could see absolutely no difference in the appearance of the two yarns. Therefore, it should be easy to understand why we saved approximately $.002 per pound on cotton sprayed with oil.

"WASH" goes on to quote Mr. C. S. Tatum, of Raleigh, N. C., who says (in June, 1929, COTTON, page 908) that carefully selected cotton makes stronger yarn than cotton not carefully selected, which is self evident and I heartily agree with Mr. Tatum on this.

When it comes to setting the feed plate to the licker, I fall in alongside of Mr. Tatum against our good friend "WASH," who states that theer is no danger of injury to the cotton fibers by setting the feed plate as close as possible; he also declares that he has seen the cylinder fillet ruined and mote knives broken by setting the feed plate as far away from the licker as 17/1000 gauge. This seems to me to be the most preposterous statement in regard to a card setting that I have ever heard from any mill man.

A number of years ago I was in charge of a card room of 300 cards. My standard setting of the feed plate on these cards was 17/1000, and I have yet to

see any injury whatsoever to any of the machines from such a setting. With this setting I increased my breaking strength and produced a web as clear and smooth as I could wish for.

I would like to see further discussion along these lines in this column. I feel quite sure that there are others who feel as I do about the matter.

CONTRIBUTOR No. 4654.

Put Selvage Threads in Magazine Creels.

EDITOR COTTON:

Some mills buy selvage for their cloth from other mills and have it delivered to them on cones—either paper or wooden cones. It has been discovered that if a magazine creel is used such as is used to supply high speed warpers warping from cones, these cones of yarn will give a continuous supply to the slasher and there will be no run outs or stopping to piece in a new cone.

Such a magazine creel can be constructed on the sides of the slasher and wooden cones of exactly the same taper as the paper cones on which the yarn is shipped are permanently attached to this creel. The full cones of yarn are firmly placed on these cones and the magazine transfer tied. It will be necessary to have the yarn shipped with a "tailing" of several inches on each cone, in order to tie the transfer between the two cones.

CONTRIBUTOR No. 4634.

Clamp for Reducing Waste on Beamers.

By H. L. Pratt

USERS of direct beaming outfits, or creel beamers, have many waste problems, and some of these, as yet, have not been solved. I have succeeded, in a measure at least, in reducing the waste that follows the tying in of a small creel of yarn behind a large one, as the subject of this paper indicates.

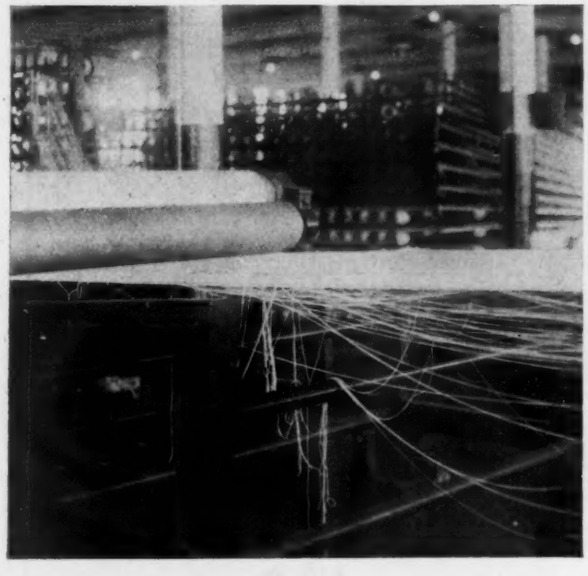


Fig. 1.

If, say, 900 bobbins of yarn are tied in behind a 1,500 bobbin creel, the 600 ends difference must be cut out between the tension rolls and the eyeboard. When the beamer is started these 600 ends are released by the tension rolls and they drop down as shown in Fig. 1. These loose ends generally snarl and tangle as they approach the comb, and I have known this to break some of the teeth out of the comb, while nearly always some of the teeth will be bent. Then on account of there being so many ends with nothing to keep them tight it is difficult to do a good job putting on the lease paper.

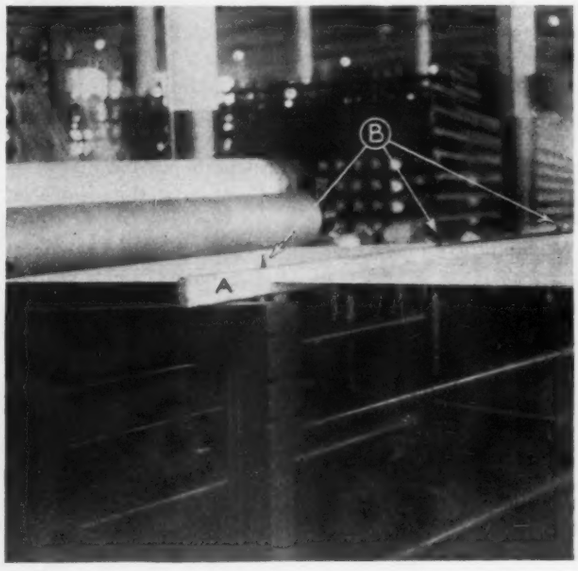


Fig. 2.

My method of overcoming this consists of a clamp, shown at *A* in Fig. 2. This clamp is made of two pieces of heavy hardwood, about one inch wide, 1¼ inch thick and about 76 inches long. (Our longest loom beams are 72 inches.) Fig. 2 shows the clamp so clearly that a detailed description is hardly necessary. The bottom piece has three bolts secured in it, equally divided, that protrude through holes in the top piece. Thumbscrews, *B* in Fig. 2, fitting on these bolts, fasten the two pieces together, making the clamp. To get a better grip on the yarn the two pieces of the clamp should be lined with clearer flannel or some such substance.

When the creel has been tied in and the beamer gotten ready to start, run it slowly until the rolls are about ready to release the loose ends already referred to. Fasten the clamp on the sheet of yarn just as close to the rolls as possible, and start the beamer again. The yarn will be held perfectly smooth, as shown in Fig. 2, if the clamp is made rigid and properly lined as suggested. The clamp can be run on almost up to the comb, thus saving a yard or more of waste, as well as saving the comb itself. After putting on the lease paper, the clamp can be removed, the comb taken down out of the way, and the beamer again started to get the beam in position to doff.

Answers to "Old-Timer's" Last Two Weaving Questions.

Compiled by J. W. Swiney

THIS MONTH we are going to give several answers, which we have considered representative of the general consensus of opinion of the various contestants, to the last two questions in "OLD-TIMER'S" weaving contest.

It seems that there was less diversity of opinion concerning these two questions than there was concerning any other two. At least 75 per cent of those sending in answers to the questions stated that no material had been successfully substituted for leather as a check strap and most of these gave practically the same reasons why no substitute had been found for leather. There were several, however, who stated that successful substitutes had been found for leather and in order to present both sides of the question, we are giving here answers from those who felt this way about it, as well as an answer which adequately presents the other train of thought—that is, that there is no substitute for leather as a check strap.

Although the large majority claimed that the shuttle spent most of its time in the boxes, some stated that it spent most of its time traveling from one box to the other. Here, contrary to the method adopted in the former question, we found that we could present the opinions of the minority with one answer, while it was necessary to use two answers to give the contentions of the majority.

If any of you have different opinions from those given here, we will be only too glad to hear from you. Don't forget what "OLD-TIMER" said about swapping ideas: "If you have an idea and I have an idea and we swap—then you have two ideas and I have two." There is a lot to that.

Question No. 5 read:

Why has no material been successfully substituted for a leather check?

In reply to this one contributor gave the following answer, "It may be safely stated that successful substitutes have been found for the leather check. Some looms use a coil spring to check the back action of the picker stick, and web straps have been found efficient. However, leather is, and has been in long general use, and it would take some very radical and highly efficient substitute to displace it. Leather checks possess the natural properties desired. It offers a good friction surface, is pliable, resilient and has the advantage of long wear and nominal cost."

Another answer to this question was, "I am not at all sure that no other material has never been successfully substituted for a leather check. In fact, I have used substitutes with pretty good results. In my opinion, the natural inclination of the average man to do things just as they have always been done has quite a lot to do with the unpopularity of substitutes for leather. I had a very good mill man visiting me a few days ago who told me that my check straps were no good and did not protect my shuttles. As a matter of record, I am getting an average of two years and four months service out of my shuttles against this man's considerably less than one year. I do not recommend any substitutes, but still it can be successfully done. Often a certain thing goes into a weave room and an overseer lets his loom fixers and other help bump it out. Many things fail in mills for lack of sympathy of users."

The next man felt a little different about the matter, "The purpose of the check strap is to check the stroke of the picker stick. It is necessary that the picker stick be given a hard quick pull in order that the shuttle will be thrown from the box, across the lay, and into the other box in a given time; which is a fraction part of a second. This picker stick must be free to move a certain distance without meeting any resistance other than the shuttle. When it has made a long enough stroke it must be stopped and allowed to go back in position to drive the shuttle again when it returns to this box. A heel spring at the foot of the picker stick pulls this back. The check strap must not be hard or rigid, as this would break the picker stick and would jar the loom. It must give to a certain extent, but must not stretch. It must be positive and always be the same tension. It must be of a material that will not be affected by either moisture or temperature. It should be of such material that it will last a long time and not break. Leather comes nearer meeting all these requirements than any other material we have ever used."

The sixth and final question asked by "OLD-TIMER" was:

Where does the shuttle spend most of its time during weaving?

"In the boxes," said one contributor. "We know that for every revolution of the crank shaft one pick of filling is placed in the cloth, now let us see where the shuttle is during this one revolution of the crank shaft. We will start with the crank a little beyond top center at which time the shuttle starts to move to the opposite box. By the time the crank has reached bottom center the shuttle must be in the opposite box or the dagger rod won't come up in time, which will cause the loom to bang off.

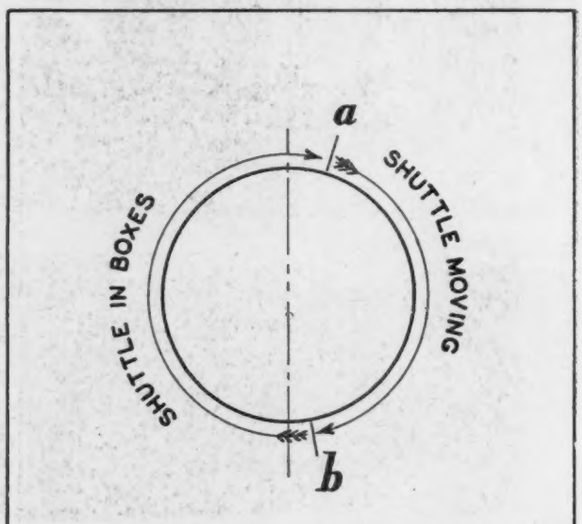


FIG. 8

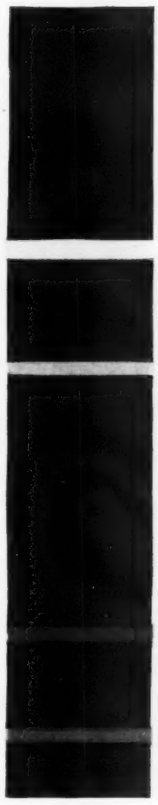
cooper hewitt light is as "SOFT" as moonlight

yet better than daylight

THE late Dr. Steinmetz, electrical genius, is one of a number of authorities for the statement that yellow-green light is the most harmless, the least irritating to the eye. "The harmful effect of working very much under artificial illumination," he wrote, "does not exist with cold light such as the light of the mercury lamp."

Science says the cool yellow and green rays of the spectrum are the rays by which we see best. The remarkable seeing power of Cooper Hewitt light is accounted for by the composition of its spectrum — over 90% yellow-green.

Cooper Hewitt mercury-vapor lamps give light that is as soft as moonlight, yet better than daylight. The reason is that it is composed *almost exclusively* of the light rays found *in the middle* of the spectrum. To understand why these are the rays of greatest *seeing power* you have only to remember that as you go away from the middle of the spectrum in *either* direction you reach light waves by which the eye does not see at all. At one end is the infra-red; at the other, ultra-violet.



Cooper Hewitt light for most industrial uses is *better than daylight.* In plants where it is used workmen see all objects as sharply and clearly as if they were magnified. To realize this you have to remember only two facts: That the colors of which daylight is made come to a different focal point after they pass through the lens of the eye, and that Cooper Hewitt light is made up mostly of yellow and green which focus practically as one color (yellow-green). Thus it makes objects sharper and clearer in form and outline.

Blue and violet, which have comparatively little seeing power, comprise less than 10% of Cooper Hewitt light.

Many other advantages of Cooper Hewitt light are explained in a new illustrated booklet. You are invited to write for it. No obligation. General Electric Vapor Lamp Company, Hoboken, N. J.

Join us in the General Electric Hour, broadcast every Saturday evening at 9 o'clock E.S.T. on a nation-wide N. B. C. network.

GENERAL ELECTRIC

VAPOR LAMP COMPANY

(*Formerly Cooper Hewitt Electric Company*)

[*See next page*]

Cheaper to prevent than to pay for—

Hundreds of industrial accidents happen like this:

The power was shut off. Two workmen started to disassemble one of six semi-automatic, group driven machines. A repairman, cleaning the others, needed a certain tool. A bright, bare, drop-lamp, suspended as usual just above the machine's working level, threw its glare into his eyes—and cast the dark shadow of the machine-frame across the safety switch. He reached for the tool and grasped—the switch.

✚

Result: A part of one workman's finger severed; the other's foot bruised and his arm cut.

✚

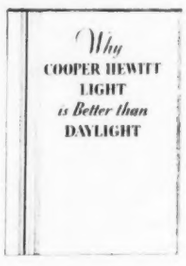
Adequate and proper illumination, the insurance company reported, almost surely would have prevented this accident—just as it would prevent thousands of others throughout industry.

And who paid for this accident? Well, in compensation and medical charges the insurance company paid—$317. In uninsured and uninsurable damage to machines, plus idleness, plus interrupted operating schedule, the employer who was "economizing" on his lighting bill paid—$1,700.

✚

On the other side of this page you may read how Cooper Hewitt mercury-vapor illumination can prevent accidents in industrial plants by providing light that is "better than daylight." In hundreds of modern plants today Cooper Hewitt light is *proving* how much cheaper it is to prevent than to pay for accidents—in addition to increasing production, reducing spoilage and otherwise improving efficiency generally.

General Electric Vapor Lamp Co.,
853 Adams St., Hoboken, N. J.



MANY other advantages of Cooper Hewitt illumination are given in a simply written booklet "Why Cooper Hewitt Light is Better than Daylight" which will be sent gladly upon request

Join us in the General Electric Hour, broadcast every Saturday evening at 9 o'clock E. S. T., on a nation-wide N. B. C. network

GENERAL ELECTRIC
VAPOR LAMP COMPANY

(Formerly Cooper Hewitt Electric Company)

(see preceding page)

"See our exhibit in space 82-83 at the International Textile Exposition. Also at the Knitting Arts Exhibit in space 54-55."

"In Fig. 8 the circle represents one revolution of the crank: *a*, point at which the shuttle starts to move; *b*, point at which shuttle must be in opposite box. The distance from *a* to *b* is less than from *b* to *a*. Therefore, during the greater part of one revolution the shuttle is in the boxes."

Another contributor was also of the opinion that the shuttle spends the major portion of its time in the boxes. He said, "The shuttle spends most of its time in the shuttle box. The shuttle leaves the shuttle box after the crank leaves top center and enters the other box before the crank gets to bottom center, thus causing the shuttle to spend most of its time in the shuttle box. The more power that is put to the shuttle the longer time it dwells in the box. It takes more power to run a shuttle on some makes of loom than it does on other makes. Hence, no definite time can be figured for the time that the shuttle stays in the boxes.

The next man's opinion, however, was somewhat different. His answer was: "The shuttle spends most of its time traveling from one terminal of the box to the other, or in other words, from picker to picker. My reason for this statement is that the shuttle leaves the box, or rather starts leaving the box, when the crank shaft is on top center and reaches the terminal of the other box on or a little after the crank makes a half turn to bottom center. Some looms are set to pick a little past top center of the crank, but the shuttle still has the time that it takes the crank to make one half revolution and a little more before the protection rod dagger strikes the frog. Therefore, in all cases, the shuttle is traveling from one box to the other while the crank makes a half turn from top center to back center or to bottom center and as the lay dwells longer on the back center than on the front center of the crank the shuttle spends most of its time traveling from one terminal of the box to the other box terminal or from one picker to the other."

Care and Operation of Fly Frames.

EDITOR COTTON:

At the beginning of my few remarks I wish first to deal with the operation of a speeder or fly frame, and hope later to outline various defects in the running and their remedies as I would apply them.

The object of a speeder as all our card room men know, is to produce roving which is as perfect as possible, that is, evenly drawn and twisted in addition to being clean and free from the minor impurities, which surely will collect if strict adherence to certain rules is neglected.

However, to fully understand the operation of a fly-frame, we must know how each and every section or organ of the machine is made to function in the way necessary for the production of roving wound onto a bobbin in the form most suitable for the after process.

Of course in describing the various drives it is most appropriate that the driving of the spindles should receive the first consideration, this being a direct drive, and to most minds is simple to understand, though in the treatment of the following subject it is necessary to deal with this.

So we find that it is an invariable practice to drive the back spindle shaft directly from the pulley or driving shaft by a train of gears coming next to the flywheel, the first gear being fast on the pulley shaft; another being a carrier gear and a third being a driven gear fast on the end of the back spindle shaft and gearing with one of the same size fast on the front spindle shaft, which of course revolves in the opposite direction. Bevel gears set on the spindle shafts for every spindle, and coupling gears at certain intervals drive the spindles by means of spindle gears screwed onto the bottom of each spindle.

So much for the driving of the spindles, the speed of which is always constant. The next drive to consider is the one necessary to operate the rolls. Now most of us understand that it is the usual practice to have the twist gear fixed on the end of the pulley or driving shaft, and to drive from the latter through a carrier gear to a gear set on the top cone shaft, on the head end of which is a gear, which drives the front roll gear.

Where long ranges of twist per inch are required the carrier gear aforementioned may become a compound or double carrier.

In the operation of the lifter or carriage, and the driving of the bobbins, we find a difference, inasmuch as these two organs are caused to alter their speeds for every new layer of roving that is wound onto the bobbin, and it is mostly the practice to drive both the winding-on part of the bobbin speed, and also the lifter from the same source, viz., the bottom cone, so that the lateral traverse of the cone belt equally affects the speed of both parts. The lower cone, of course, is usually driven from the top cone by a narrow belt.

The bobbin drive is a complicated one, and involves the use of a differential, or epicyclic gearing, though in every case the revolutions of the bobbins are obtained from two different sources, the first being directly from the driving shaft, while the winding-on proceeds from the lower cone.

A train of gears, maybe five or six, connect the bottom cone with the compound or differential motion, the correct number depending upon the make of the frame, or whether it is bobbin or flyer lead.

One of the gears is usually a bevel, and is fixed on a short cross shaft through which the reversing bevels receive motion, hence, by means of a traverse or lay gear on the end of the reversing bevel shaft, which drives a train of three gears to the lifter shaft, the carriage or lifter receives its motion, which is termed the slow motion.

However, since we get the carriage movement and the winding-on revolutions from the bottom cone, a convenience is always provided whereby the speeds of both the foregoing motions may be changed by one gear—the bottom cone gear. Still, at the same time, the division of these driving parts makes it possible for the use of change gears to alter either lifter speed or the winding-on rate independently.

So far we have noticed the provision of three of the change gears found on any make of speeder—the twist, lay and bottom cone—the latter, of course, not necessarily a change gear, though it may be changed.

Another motion or drive is the lateral movement of the cone belt, which is controlled, on the American

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make of frame, by the gradual closing of the builder jaws, the escapement of the contact dog, and the tension gear at each reversal of the lifter.

At each escape of the contact dog over and under the upper and lower builder jaws or nuts respectively, a bevel gear, beneath the "dog" on the eccentric shaft, drives, through a train of bevel and spur gears, the tension gear, the size of which governs the length of movement of the cone rack, and through the taper gear on the builder rod, also the closing of the builder jaws at every reversal of the lifter. By means of the eccentric we obtain the reversal of the lifter, because as the contact dog escapes, the eccentric by means of the bevel shaft is enabled to throw one bevel out of gear with the strike bevel, and instantly put the other in gear, thus giving a reverse movement, without any dwell on the change providing all gears in connection with the entire drive are perfectly secure, and minus "back-lash." The last, but not the least, of the motions necessary for the proper operation of the fly-frame is the roller-traverse motion. Simple, though all-important, as can readily be proven in the case of failure of this motion to function properly. This motion is actuated by a worm on the back roll at the foot end of the frame, driving a worm gear which is constructed to operate as a cam, thereby giving a lateral, back and forward movement to the traverse to which it is attached. Now, regarding running defects or faults on speeders, we must admit that there are many. Some of these may exist, and still the frame can be operated. Others of course, create a stoppage. It is the aforementioned which cause all of our trouble in the production of good work, because through culpable, or inculpable ignorance, we are apt to allow remedies to wait through various causes. Sometimes we find a section hand or fixer is tied up too much with other duties, so that he cannot spare the time to look for minor faults, and the speeder tender does not worry if the frame runs anything like it should run.

Let us now check up on some of these minor defects, and in doing so we will first of all include the deficiencies of the tender. The chief fault that most tenders have, and will have if not checked, is an improper method of creeling. By that I mean, they will not, if there is any chance of getting by, piece the roving end to end and soft enough to pass through the rolls without being a hard end. A correction is absolutely necessary there, and finger wetting should be abolished. But instead, let them be provided with small cups of whiting or powder of some sort at certain intervals along the frames where they can dip the fingers, which give to some the necessary grip for piecing up roving at the back as well as the front of the frame. Piecing up a roving over a flyer to the rolls is simple, to do properly, and in all, there are five motions, but how many realize that the proper way is the easiest, and this calls for strict supervision of those in charge of sections. When any speeder tender is seen to unwind a length of roving from a bobbin to piece it up, and before passing it down the flyer tube, gives it a few extra turns so it will pass down easier, that tender should be corrected right there and then, and shown the proper way and also warned against any recurrence of the wrong method. The roving in question should be taken from the bobbin, making sure it is neither single nor double and passed over the flyer without one extra turn being applied, and then on piecing up at the rolls just two back-and-forth rolls of the two rovings between finger and thumb are necessary to complete a proper piecing, the result being no excessive twist, and minus hard ends.

Right here I am reminded of the little girl called Elsie whom "CONTRIBUTOR NO. 4604" quoted in his August, 1929, letter, when she informed our friend that she had her own set of tools, which turned out to be a piece of hard waste and an oil can which she used properly and at the proper time. There are many tenders of the same kind who value the use of oil, but we have many more everywhere who forget that oil is made for lubrication of mechanical parts. It may be that they use the oil can, and the oil, but often on the floor or worse than that, if they do put it where it belongs they neglect to ascertain whether it is of the right consistency for the part being oiled or whether it is clean, or mixed with grit and waste. For instance, take the oiling of front loose boss rolls. To do this job properly a sheet iron or tin box about twelve inches long, nine inches wide and two inches deep, and the inside bottom lined with thick flannel soaked with roller oil should be provided. This could be fitted to a stand and run on three or four wheels to facilitate passing along the frames. Now in doing this job of oiling, each arbor could be wiped clean before starting to oil, then one person would take each arbor, roll it on the soaked flannel and pass it to another who would replace the rolls, and by this method many frames could be oiled more easily and with an elimination of so many patches of oil on the floor, as is the case when tenders are allowed to use just an oil can. Besides doing the job in the latter way becomes tiresome, hence, the reason for tenders being dilatory regarding oiling rolls properly. Another item regarding our speeder tenders, are they trained to call the section hand or fixer immediately they see anything going wrong with the running of the frames or are they let to go into that slipshod method of leaving it for tomorrow, or maybe in the case of the day shift leaving it for the night hand to tell his or her fixer or vice versa?

This kind of business should never be tolerated, because delays will often cause trouble for everyone, where maybe a few minutes with a wrench or an oil can would prevent a serious stoppage. The old, old adage, "A stitch in time saves nine," should be thoroughly impressed upon everyone concerned. There should not be any necessity to mention anything about cleanliness, on speeders, still a word concerning cleaning rolls everyday with a small stiff bristle brush for the purpose would not be amiss. This rule should be enforced and also tenders should be made to check up on the condition of clearers as well as the rolls which on being shown to the fixer should be replaced, as soon as possible. In replacing any roll care should be taken to see that, in the case of leather rolls, the laps of some are not running against the steel roll. This error will soon shorten the life of the roll.

Another branch of cleanliness which is up to the tender in most mills is gear cleaning. That is, the

THE PHOENICIAN GALLEY

THE Phoenicians, of Syria, descendants of the Canaanites and founders of ancient Carthage, at one time circumnavigated Africa and ruled the Mediterranean. Being great merchants and traders, they were early advanced in the art of shipbuilding. It is thought they invented the bireme and trireme, galleys with sails and two and three rows of oars. These oars were propelled by condemned criminals sentenced as slaves to the galleys. Imagine the unceasing toil of these men chained to their crowded benches . . . sweat-streaming brows . . . weary forms always in one position . . . naked bodies lashed by brutal guards . . . straining hour after hour at heavy oars on storm-tossed seas. Chained . . . and if vanquished in battle, abandoned.

The advanced development of oceanic transportation is today reflected in high-powered, luxurious passenger liners, giant battleships, great freight steamers exchanging the commerce of the world, transoceanic aircraft. These lightning-like methods of transportation are due to machinery and mechanical devices.

Machinery has revolutionized labor. In the textile industry, intense competition demands speed in production, and the most economical means of increasing production is by machine labor.

If your mill is still cleaning bobbins by hand, you are permitting an enormous "leak" in operating costs.

The Termaco machine for cleaning roving bobbins saves time and labor by doing the work of many men. It saves waste, in that staple is not cut and needs no reworking. It saves bobbins from the junk pile, eliminating the splitting of hand-cutting.

The Utsman machines clean filling bobbins swiftly and efficiently, without split ends.

The type K machine cleans both plain and automatic loom bobbins and certain kinds of warp bobbins.

For years Terrell machines have helped mills cut costs. Their swift cleaning of thousands of bobbins a day assures continuous production, without waits for bobbins. In the average installation they pay for themselves within the first twelve months.

Write for complete information about these machines. In writing, state whether you are interested in cleaning roving or filling bobbins, and if possible send a sample of the particular bobbin you have in mind. If you are interested in motor-driven machine, give full details, including voltage, phase and cycle of your current.

THE TERRELL MACHINE COMPANY, INCORPORATED

Charlotte, N. C.

(General Supply Co., Danielson, Conn., representatives for New England, New York, New Jersey, Pennsylvania and Canada.)

head end and the back of the frame, which should be done at least twice per week, care being taken about cleaning, especially around the builder, tension device and also the draft gears. Lifter racks and gears require to be overhauled at different periods, and especially the lifter shaft itself, which is very often robbed of the necessary drop of oil in every bearing. It revolves very slowly, granted, but there is always a great strain on this shaft, and that little oil helps out wonderfully.

One more item on the list of cleaning rules is the keeping clean at all times flyers and spindles. Anybody concerned with the operation of a speeder section knows the trouble that dirty flyer tubes will cause, but some tenders will not worry until it is too late and dirty spindles will ruin a frame if allowed to be neglected for long, as the possibility of waste and dirt getting into the bolsters is increased and this surely results in extra friction, and possibly breaks in gears, etc. Therefore cleanliness and the correct way of piecing roving in the creel and at the rolls are the two foremost laws, which should be enforced on speeders.

A careless or disobedient tender should be discharged, because that brand of help will cause more trouble than any class known, even though they know their job, but refuse to do right. They ought to be eliminated. Here is an example of what I mean:

One man was repeatedly warned not to lay bobbins on the rail before doffing time, but when he got the chance—though by doing so he gained little—he would do what he was told not to do, but once or twice two or three bobbins found their way to the floor at the back of the frame, through vibration of the carriage of course, and two of the bobbins managed to slip just under a couple of lifter racks and refused to allow that carriage to go down to its full traverse; hence, a break through disobedience and carelessness.

Laying bobbins on the rail before doffing is a dangerous practice and should not be tolerated. It breaks rack teeth and lifter gears, and that spells work. This practice is more dangerous on an English make of frame, when bobbins slip on to the short rack or poker-bar of the builder. Many poker-bars have been broken in this way. However, the aforementioned bad practice brings my mind now to some of the running defects and remedies which I mentioned at the beginning of my letter.

Now in case of bobbins under the racks, on the first one or two of the changes, we must know that the parts of the rail affected must be out of level. Therefore, before starting the frame, those racks which have been disturbed, should be set again even with the rest of the racks. If this is not done, there is likely to be another run-over on the next change. In fact, there surely will be, and possibly something else in the lifter mechanism thrown out of gear. Sometimes it has happened where a rail has been held like that on the change, the first tooth of the slip gear has been ground down by the cone gear. Therefore, all the gearing, etc., in this connection should be examined before starting the frame, in order to save further trouble, because even if nothing serious happens immediately after starting the frame there is always the uncertainty about any gears slipping, as there is always the chance that after the rail has been jolted, as in the case caused by the bobbins, that one or two screws have been loosened, and of course this will surely mean that sometime or other the rail is going to slip, possibly on the change, which means roving winding under and over the layers on the bobbin. The latter trouble may also be the result of a loose builder nut or jaw, and of course a loose builder, but the top builder jaw is liable to loosen first, and I have seen where the running of a frame has been greatly improved after this jaw has been tightened. These parts should be overhauled at different periods to save trouble, and there I may say that if a fixer took the trouble to go over the chief running parts of one frame with his wrenches every day he would surely reap his reward, because we know that in some parts of the mechanism, if only one screw loosens, we are out of luck.

Another cause of running over of roving as previously described is dirty bolsters and tight spindles. Of tight spindles there may be only a few, but dirty bolsters are always prevalent, if a routine of cleaning these is not strictly adhered to. The reader will know that when a dozen to twenty spindles on any frame are not running freely, there is surely something going to stick. Sometimes, of course, the method of cleaning bolsters is simple, but care should be taken to see that spindles do not get mixed. This can easily be avoided by having each spindle gear detached and put beside its own spindle, and then each spindle can be taken out of the bolster, down which a good piece of hard waste could be pushed by the spindle until the bolster is clean, and then the spindle can be replaced. Each bolster could be done in this way unless a scraper is being used.

Another defect which occurs in the running of a speeder, and which is often treated carelessly, is the loosening of bobbins and spindle shaft gears. When these become loose and out of gear in twos and threes in any one section, they should never be geared, without first ascertaining as to whether that certain coupling is in perfect order, because if the coupling is loose, further trouble is coming soon.

Sometimes a coupling may be loosened, but still be able to carry on for a short time. Of course where the coupling is found to be loose, then it can be forced with its certain section of shaft and other gears thereon into its original place. I have known a loose top cone to make a man change more tension gears than any fixer just because he did not stop to think, but he got the idea into his head that only the tension gear caused the trouble, whereas, in that case, two or three other defects may have been the cause, such as a loosening sleeve gear, a loose bottom cone gear or a loose back bobbin shaft gear, or possibly a loose cone belt.

However, the foregoing are just a few of the running faults we have to contend with on speeders, and now, before closing these few remarks I wish to pour forth something about roll setting on the frame, that is, the steel rolls. My chief aim in so doing is to show my disfavor with the method some men employ in setting steel rolls. Of course, almost all fixers follow the

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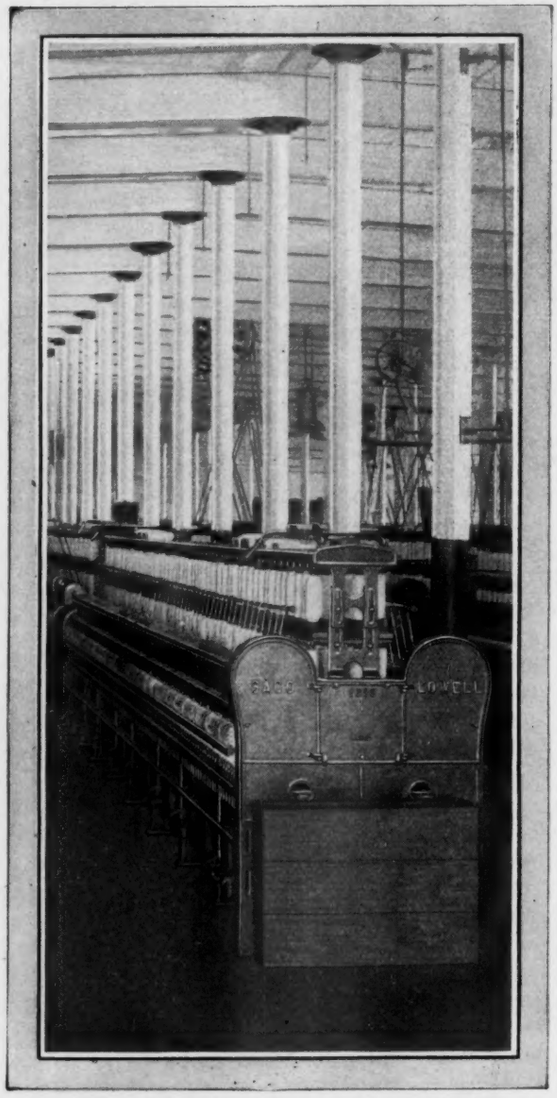

Perhaps you've wished that your plant had the ample window space found in so many of the more recently constructed "daylight" plants. You may also have considered alterations to bring more light into your workrooms—but hesitated because of the cost involved and the interference with production. If so—you will be glad to know that there is a simpler, less expensive way to improve the light conditions in your plant.

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Sherwin-Williams, the world's largest paint producers, have developed Save-Lite Industrial White Finishes especially to increase the working light in mills and factories. They are saving thousands of dollars every year for leading mills of the South.

Where Save-Lite is correctly used, the quality and amount of light are increased just as surely as though the windows themselves were increased in area. The increase is often as great as 30 to 50 per cent. S-W Save-Lite takes daylight or artificial light and reflects and diffuses it into every angle and recess of a room. It assures clear visibility and relieves workers from eyestrain.

More and better work with good light

Improved lighting conditions result in increased production, less spoilage and fewer accidents. There is also a noticeable improvement in workers' morale and in the quality of finished products.

Sherwin-Williams Industrial White Finishes are provided in Save-Lite Gloss, Eg-Shell or Flat-White. They level well under spray or brush and stay white. They have excellent covering qualities and are economical to apply.

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Sherwin-Williams Mill Village Paints are standardized exterior and interior finishes for every requirement of Mill Village property. Their lasting qualities make them an effective and economical means of staving off depreciation.

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same rule as regards ungearing, loosening every stand to begin and then setting at every other stand, but most of them have the stands where the gauge has not been used tightened also, without really ascertaining whether they are set to the gauge or otherwise. I have seen this done by so-called good men who take it for granted that if every alternate stand is set to a gauge the others will be near enough. This is not so, and let anyone try it for himself if he doubts it.

I agree with the rule of setting alternate stands first the whole length of the frame, but a return journey must be made to make sure with the gauges as to how the others are set. Rolls have been broken through the aforementioned negligence.

In conclusion, will say that I hope that my little contribution will be of some service to this department.

D. E. (R. I.)

The Second Hand and Machinery Upkeep.

PART FOUR

THIS is the fourth of a series of articles discussing the second hand. The first, covering his relation to labor turn-over, appeared on page 805 of the May, 1929 issue; the second, discussing his qualifications and selection, was on page 1291 of the September, 1929 issue; and the third, covering his relation to labor cost, was published on page 441 of the February, 1930 issue. Subsequent articles will appear in later issues.

EDITOR COTTON:

In writing this series of papers on the second hand and his various duties and responsibilities, I have been prompted to say that this thing or that is the most important duty of the second hand, but in going more deeply into the matter one finds it difficult to decide just what is the most important thing that the second hand has to do. The subject that I have chosen for discussion in this article—the second hand—his relation to machinery upkeep—involves a most important responsibility of the second hand. Again it is hard to separate the duties and responsibilities of the second hand from those of the overseer. As the overseer is accountable to the superintendent and the second hand responsible to the overseer, they really have to work together to make their department what it ought to be. One can readily see that it is impossible to attempt a discussion of the second hand without occasionally bringing the overseer into it.

The machinery in the mill represents an investment of the stockholders and is put in the mill for the purpose of converting the raw cotton into a product of yarn or cloth to be sold for the profit of the mill and for the service of the consumer. The machinery in the various departments is of course under the care of the overseer and the second hand of that department. They must not only see to its efficient operation, but must see that the different machinery is maintained in good condition that it may continue to produce economically a first-class product. It is only when the age of the machine or constant service under hard conditions cause the upkeep of the machine to cost too much for profitable operation, or when another machine has been made that will produce as good or a better product more economically—it is only then that a machine should be discarded.

If the mill does not have some system of inspection the second hand should devise one of his own. It has proven to be a good plan to have each machine gone over by the section man at least once a month. This may seem to the section men, at first, to be a lot of trouble, but they will soon find it to be to their advantage, for it is just an example of "a stitch in time saving nine". Many bills for supplies and machine shop work will be saved, as well as much production gained, by the machines not having to stand for extensive repairs. The second hand should take a scratch pad or a note book and in the afternoon (he usually has more time then) look over so many machines, that is the number that will enable him to get over his room in a month. In a large room he will possibly have to delegate this to the assistant second hands, but even then he must constantly check what is being done. He will look over the machine carefully checking the various settings, look for loose nuts, bolts, screws, bolts of odd sizes, worn parts, broken parts, oil holes stopped up and condition of belts and whether they are rubbing the belt shifts. He should take note of the general running condition of the machine and the quality of the product, and he should question the operative as to any trouble that may have been caused by the condition of the machine.

He should make note of anything that he finds wrong and furnish a copy to the section man. The section man should put in all his spare time the balance of that day and the morning of the next on this machine, or until it is put in good running condition. When he reports the machine okeh, the second hand should re-check it to be sure that nothing has been overlooked before finally marking it up in his inspection book. If a job is badly run down it is better to have each machine stopped and given a general overhauling, but if this is not possible I think it a good idea for one item to be fixed at a time, say cams or spindles or lickers-in or whatever seems to be in the worst condition. Then, when these have been repaired, start on something else.

The second hand should see that no job is just patched up until "next time." If a machine has to be fixed there is absolutely no economy in doing the job halfway. While economy in the use of supplies should be insisted upon, make it plain to the section men that this does not mean that the machinery is to be neglected and that no excuse will be accepted for a job on a machine being "botched up." If the fixer has the proper tools and the supplies that he needs and the second hand is really conscientious in his inspection of the machinery, the jack-leg fixer that we have all heard about, and maybe have been rather closely associated with, will be a thing of the past. He will either quickly train himself to be a good fixer or he will have to get out, for his work will not stand a rigid inspection.

The overseer or the second hand should examine all new supplies immediately upon their arrival at the supply room. If they do not come up to the sample or to specifications, or if the sizes are not correct, they should be rejected. In fact care should be exercised

in ordering supplies to be sure that the correct information as to just what is wanted has been furnished the buyer. Overseers with mills having purchasing agents will have to co-operate very closely in this respect, for the purchasing agent's business is to save money for the company in the purchase of its supplies, and sometimes not knowing exactly what is wanted, he will be tempted to sacrifice quality for a saving in price. However, he will want to co-operate for the best interests of the mill, so any lot of supplies of an inferior quality or bad fit should be reported to him at once.

The second hand should check up occasionally to see that the section men do not carry a large stock of supplies in their workbenches or cupboards. I would say that a two-weeks supply of any item would be sufficient. There are two reasons for this. First, an abundance of anything on hand tends to wastefulness. And second, supplies in section men's workbenches do not show on the company's books. An item may show short in the supply room when as a matter of fact each section man may have an abundant supply on hand. So I think it much better to keep all supplies not needed for immediate use in the supply room where they can be looked after and properly checked.

The second hand or the head section man should examine each broken part before it is thrown away. Section men have been known to throw away a piece with a broken set screw which could have been removed by the machine shop. If a part has to be discarded be sure that all good bolts and set screws have been removed and saved. One mill has a box in its machine shop for the reception of all parts that are to be junked with a section for each department. Once each week the assistant superintendent and the overseers meet at this box. Every part is taken out and examined. Sometimes parts are salvaged, but the best thing that comes of this is that the overseer is kept informed as to the breakage of his department and if it becomes excessive he can take steps to remedy.

In the larger mills, at least, the second hand will not be called upon to do any of the actual fixing, in fact he will not have time. But it can readily be seen that he will have his hands full with his larger and more important duties.

CONTRIBUTOR NO. 4022.

South Bend Lathe Works Introduce New Lathe.

The South Bend Lathe Works, 426 E. Madison St., South Bend, Indiana, has just introduced a new 9-inch lathe, which, like the previous models of South Bend 9-inch lathes, is a back-geared screw-cutting precision tool. The company states, however, that its design makes the new lathe a distinctly different machine.

El Paso Gets Sodium Silicate Plant.

The completion of a plant at El Paso for the manufacture of sodium silicate, (water glass) was recently announced by the Rathbun Company, Inc. The company states that the plant is modern, on an eight hour basis, has a total capacity per month of approximately 300,000 pounds, and is equipped to manufacture various grades suitable to the soap industries, mining industries, textile industries, refractory companies, cotton seed oil mills and laundries. The general offices of the company are at Ochoa and Fifth Street, El Paso, Texas.

"Achers" and "Acres."

We shall be pleased to hear from the young man mentioned in this letter; and from others who have views on the matter.

EDITOR COTTON:

For the past three years it has been convenient for me to observe closely a young man who seemed to be very ambitious, but who had entirely the wrong conception of the methods he should use to succeed. Instead of loyalty, he used backbiting.

He was educated, cultured and refined. In his position as second-hand, mechanically speaking, he was quite proficient, and my first impression, which by the way endured for quite awhile, was that our firm was lucky to get this young man, who seemed to have the earmarks of a very valuable man.

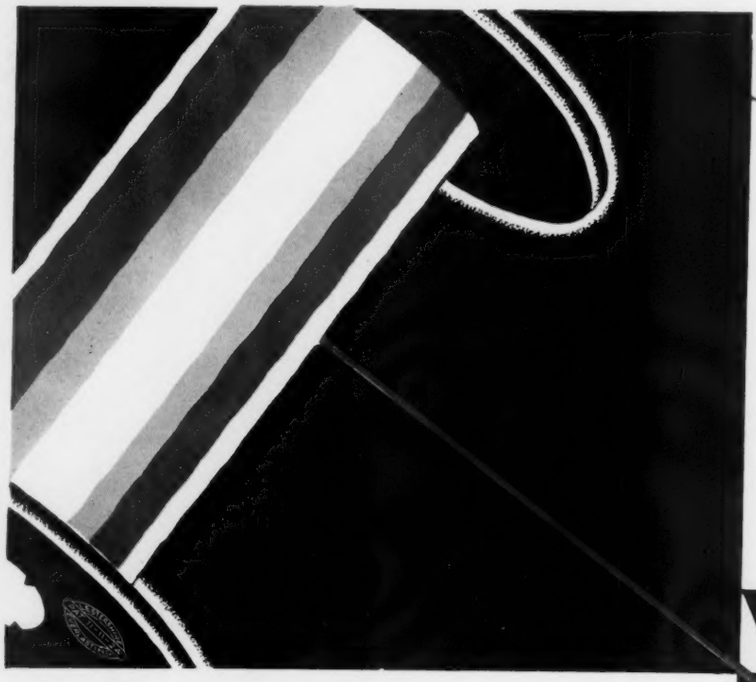
But there was one essential qualification that I had overlooked, and time proved that the young second-hand was a stranger to it. In sizing him up, I had overlooked the fact that he was not fitted to throw oil on troubled waters. If something were breeding confusion and strife in the department he could not remove it, for in so doing he would likely have to remove himself.

Yes, he was rated as a second-hand on the payroll, but if anyone were to drop in his home some evening for a chat, his conversation would lead them to believe that they were talking to a mill owner who was badly dissatisfied with his manager, superintendent, and others whom he had in charge of his mill. The young fellow would sit for hours and tell of how the president, manager, superintendent, in fact everyone connected with the management of the mill, was too dumb for words. He would tell of how he could "pull the job out," if they would just listen to him. Well, such a line would be misleading if we were not so well acquainted with the young man possessing the long tongue.

The truth of the matter is that the superintendent, overseer, or anyone connected with the firm, can do nothing about this young second-hand's ideas as to how the mill should be run, for he is very careful not to let them know what his ideas are. With the men he should talk to (if he has anything worth saying) he is a very quiet chap, but with the weavers, fixers, battery-hands, in fact with operatives from all parts of the mill, he is a very wise young man, and he spreads poison.

Now this type of person is classified in my vocabulary as an "acher", and I am sure that I am right when I say that he is a square peg trying to fit himself into a round hole when he tries to fit himself into any niche in the textile industry. There just isn't any place for him. I think the "acher" should get himself some acres and work one year all alone on his farm. I say alone, because that would eliminate any possibility of alibis. Every error that he made would stare him right in the face. In that year, even if he didn't make any money, I think he would become rich in experience. He would learn that he is a poor little insignificant human being. He would have the fact impressed upon him that inasmuch as he has not made a success in life he has no right to pick flaws and criticize the actions of men who have succeeded. He would be able

LESTERSHIRE SPOOLS



are good insurance at the

VITAL POINT

IT COSTS money to stop production at the warper, or *at the loom*. Yet this expense may be incurred if the yarn is not properly spooled. It is a vital point in production, for if the yarn does not unwind evenly there will be breaks and thin spots.

The determining factor is the construction of the spools employed. If the spools are not true the yarn winds on unevenly . . . when drawn off, uneven tension naturally results, which stretches or even breaks the yarn.

When Lestershire Spools are used the yarn is drawn off at the proper tension. They are 'true' spools, examples of remarkable construction. So mills using Lestershires eliminate this cause of breaks and weak spots in the finished fabric.

Improving the quality of production is a matter of such importance that we suggest you ask for the facts about Lestershire Spools—an investment in economy.

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SATISFACTION GUARANTEED

Pictorial History of Textile Machinery

By Prof. Chas. E. Mullin, D.Sc.
Clemson College Textile School,
Clemson College, S. C.

Part IV.

(Editor's Note: This is the fourth of a series of features in which illustrations of the earlier models of regular textile machinery, together with brief descriptions, will be presented. The photographs and information were secured by Dr. Mullin on a recent trip to Europe. It is felt that these interesting photographs of old machinery will be suitable for filing or framing by the reader.)

Arkwright's Spinning Wheel

THIS particular spinning wheel was at one time the property of Sir Richard Arkwright, and is an example of the type used at the time when Hargreaves' spinning jenny and Arkwright's frame were first introduced.

The fibrous material was held in the creel, drawn from there by hand, and worked up into a thread. This was led through the hollow axis of the flier, over one of the hooks, or hecks, on the flier, and wound upon the bobbin, which was loose upon the flier spindle. There were two bands from a double-grooved flywheel, driven by a treadle and a crank, to two small pulleys of slightly different sizes, one fixed to the flier spindle, the other to the bobbin. The rotation of the flier put twist into the thread, and the difference between the speeds of the flier and bobbin caused the thread to be wound upon the latter. Very fine yarns could be spun with these wheels, as fine as any which can be made with the machinery of the present day, but a great deal depended upon the skill of the spinner, and the output was very small.

Cotton spun by such wheels had not sufficient strength for general use as warp thread, so that warps were usually spun from flax, but Arkwright's machinery, by the greater twisting and consequent strength that it gave the thread, rendered possible the use of cotton yarns for both warp and weft. The original is in a British museum.

to see plainly that it is his duty to himself and his family to observe the actions of successful men with the one thought in his mind that he might profit thereby.

It is a sad thought for me to think of a young man rising by sheer ability to the position of second-hand before he is found out (yet some of them get to be overseers and superintendents), and then it develops that he has not had the proper training and is unfit for the position because he doesn't know the meaning of the word loyalty. Whereas, he should be teaching loyalty to the people who are working under him, he has never taught himself.

There is more to this word loyalty than many of us realize. It involves a man's honesty and integrity. Were you to ask any merchant who had dealt with our young second-hand what he thought of him, as to honesty, character, or reliability, he would not hesitate to tell you that he had always found him to be scrupulously honest. But ask his mill officials about him and if they tell you what they know it will sound something like this: "We paid him for a full measure of loyalty, which he was to instill into our people at every opportunity. He took our money, but did not deliver what we paid him for."

Now today, no doubt this young man thinks he is an honest man, because he is ignorant of the finer points of the position of a second-hand. He drifted from mill to mill and worked for some good men. Today he is as good mechanically as the country affords, but when that is said, all is said, and that qualification does not fit him for a position in which he will have the mill's people working for him.

As a moral for my story, I might mention the fact that today this young man is drifting—looking for a job. He is as bright as a pin, has abundant health and energy and a friendly disposition that makes people like him, but he is without a job. Why? Because he was disloyal to his trust. So long as he maintains this attitude he is a liability to any mill.

Now, has this young man received a square deal at the hands of the textile industry? When the men for whom he has worked read this will they not realize that had they trained him properly, the sky would have been the limit? I am confident that his rise and success in the industry would have been meteoric.

This young man is a consistent reader of COTTON and when he reads this he will probably recognize himself as the subject of it. If so, I would be glad to see him come back with a letter telling the readers of COTTON that he has seen the error of his way and is going to make good. I hope that he may tell us that his attitude has changed—that he now has the proper respect for the successful men who make jobs possible, and for the efficient superintendents who are at the head of the mills because they have worked hard and fitted themselves for that position. May he tell us that now he realizes that we cannot climb by knocking our fellow-men. We climb only through our ability to climb and by putting forth the necessary effort, and may this young man and others realize that to the man who will put forth the effort and remain loyal to the end, the textile industry is his friend.

CONTRIBUTOR NO. 4668.

Soluble Pine-Oil

for

Kier-boiling Cotton

E. F. DREW & CO. INC.
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BOSTON, PHILA., CHICAGO
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Reduces Heat 10° to 15°— Yet 94% of Light Maintained

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Proper Ring and Traveler Sizes for 50s.

EDITOR COTTON:

In your November issue "CONTRIBUTOR NO. 4667" wanted to know the largest size ring practical to use in spinning 50s warp yarn, with 4 × square root, made from 1 3/16-inch staple, without injury to the yarn.

The information he gave is not complete and any attempt at answering the foregoing question must therefore deal, to some extent, in generalities. The inquirer should have stated the gauge of frame he is using, or intending to use, for spinning this number of yarn, as well as the traverse he wants to use. He did not state whether this is combed or carded stock, and the combed yarn, having so much greater strength, makes this quite a factor in ring sizes. I am, therefore, going to consider 50s carded yarn and that the yarn is spooled over-end, so that the weight of the bobbin in spooling will not have to be considered.

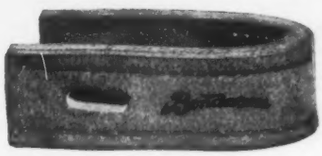
"CONTRIBUTOR NO. 4667" might be interested in the great difference in practice with regard to ring sizes found in the various mills of the South. The writer was recently in a mill where 70s combed yarn was being spun on 1¾-inch rings. Another mill was spinning 100s on 1⅝-inch rings. The two sizes commonly used for the aforementioned numbers are 1½-inch and 1⅜-inch rings, respectively. In neither of these cases, however, was the mill laid out to spin these numbers, the necessity arising because of market conditions. In both mills the spinning was running nicely and was little, if any, below the speed of the frames with the usual size rings. They were able to do this because of the wide gauge of their frames which allowed light travelers to be used with liberal ballooning of the ends.

The largest size ring that can be used for any number of yarn is limited by the gauge of the frame. It is also limited by the fact that "CONTRIBUTOR NO. 4667" mentions in the second paragraph of his inquiry; namely, the diameter of the bobbin. Recently one of the large machinery builders issued a bulletin showing the angle of yarn pull when various combinations of ring and bobbin diameters are used. The compilation of the tables in this bulletin showed that the standard practice showed the angle of yarn pull to be from 63 to 66 degrees, but a note was added that possibly the table of supposed standard practice will bear revising. Standard practice to date naturally has to consider a great many old type spinning frames with narrow gauge, so that the aforementioned tables would have to be greatly revised for modernly built frames.

"CONTRIBUTOR NO. 4667," by the use of the word practical, evidently desires to have both production and quality considered in answer to his inquiry. Both are considered in the following list of recommendations, in which I hope the inquirer's layout will be found:

Gauge of Frame	Size Ring	Bobbin Dia.	Traverse
2¾-inch (separators) ..	1⅞-inch No. 1 flange	¾-inch	6 inches
3- inch (separators) ..	1⅝-inch No. 1 flange	⅞-inch	6 inches
3¼-inch (no separators)	1⅝-inch No. 1 flange	⅞-inch	6 inches
3½-inch (no separators)	1¾-inch No. 1 flange	⅞-inch	6½ inches

Another User of BONDARON Textile Leathers speaks up!



Lug Strap

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That, and similar expressions of satisfaction are heard from not a few but many users of BOND Textile Leathers.

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Better still, send us a trial order today. We guarantee in advance that you will be well satisfied with your purchase.

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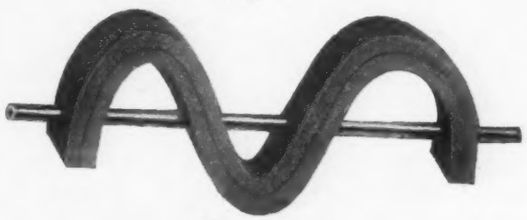

Bumper Strap

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Leather Curriers and Manufacturers of Textile Leathers and Belting

It is very much to the spinner's advantage to use the larger ring and bobbin if possible. An increase of ⅛-inch in the diameter of the ring and a corresponding increase in the diameter of the bobbin gives much more yardage on the bobbins than the smaller sizes. This is true because there is comparatively little yarn around the small circumference of the bobbin and ⅛-inch diameter lost there is negligible, while ⅛-inch increase in the ring diameter gives a large increase in yardage due to the large outside circumference. The tendency these days is to the larger ring and larger bobbins.

It is impossible to give traveler weights, as requested by our inquirer. However, it might be worthwhile to state that a small circle traveler gives a more even bearing on the ring because it keeps an upright position. That is, it does not tilt as much as the large circle traveler.

In the October, 1929, issue of COTTON, Herbert G. Beede, one of the ablest machinery men in the country, in his article, "Progress Demands Recognition of the Value of New Equipment," appearing on page 1337, described the floating operation of the traveler in large package spinning. It seems that he discovered the point at which the centrifugal force of the traveler was so nearly offset by the inward yarn pull that the traveler floated around the ring rather than running heavily on the under side of the ring flange. "CONTRIBUTOR NO. 4667" can find that point for his particular number of yarn if he has the gauge of frame that will allow him to do so. But if he has narrow gauge frames he will find that the larger his ring sizes, the heavier he will have to pull down on his yarn, which will cause him to suffer a consequent loss in speed and production.

I hope that this article will at least suffice to create more discussion of the subject.

CONTRIBUTOR NO. 4686.

EDITOR COTTON:

In your November issue you published an inquiry from one of your contributors who wanted to know the proper ring size, traveler, and bobbin diameter for making 50s warp yarn, with 4 × square root, made from 1 3/16-inch cotton, without injury to the yarn. This contributor should have stated the type and grade of cotton, the spindle speed, and whether the stock is carded or combed, as all of these have an important bearing on the answers.

However, assuming that he is using a spindle speed of 9,000 r.p.m., 1 3/16-inch Strict Middling cotton and combed stock, I would advise a 1⅝-inch ring, a ⅞-inch circle, and have 10 travelers weigh four grains. We are at present using very successfully a bobbin of 13/16-inch diameter.

I might also add that if a larger ring is used and the twist allowed to remain the same, then either the speeds must be decreased or a filling wound package made, or both, in order to prevent the gain in having a larger package being counter-changed by having a large amount of stick waste or end breakage.

As for my suggestions on travelers, I have based them on my experience with travelers for rings that have been properly broken-in, and for frames with warp wind. A. N. R. (MASS.)

EDITOR COTTON:

We noted the inquiry in COTTON concerning the proper ring and bobbin diameter for spinning 50s warp yarn from 1 3/16-inch staple cotton without injury to the yarn. Most mills would be inclined to spin this on 1½-inch ring, with about ⅝-inch diameter bobbin, although I know of a few mills that use 1⅝-inch ring with ¾-inch diameter bobbin on this type of work.

It is hard to give any very definite advice concerning the weight of the traveler, as this depends upon the speed and gauge of the frame. I would suggest that a mill select a traveler from a traveler table and experiment a little bit on both sides of this weight to find what runs best for the particular case.

CONTRIBUTOR NO. 4671.

EDITOR COTTON:

Replying to "CONTRIBUTOR NO. 4667" in his questions in regard to the largest ring practical to use in spinning 50s warp yarn, I will say that a 1⅝-inch ring is as large as should be used, and a bobbin at least ¾-inch in diameter should be used. This I think will give a very good combination for 50s warp.

It will of course be necessary for a man to try out travelers to get the right weight, as the condition of the ring and the spindle speed will have to be considered. With a new ring, he would probably have to start off with a 12/0 round point or a 14/0 square point traveler. I would consider using a ⅝ circle if he is using a No. 1 flange ring or a 1 circle in case he is using a No. 2 flange ring. F. G. (S. C.)

EDITOR COTTON:

In reply to the inquiry concerning the largest sized ring practical to use in making 50s yarn from 1 3/16-inch staple with 4 × the square root of twist, without injury to the yarn, I will say:

I have seen 50s running well with 1¾-inch ring, 7-inch traverse, 11/16-inch diameter bobbin, 103 r.p.m. front roll speed, 9,700 r.p.m. spindle speed—and I should say that was the limit that it would be advisable to attempt at present. There are several mills running this number of yarn from that staple which would consider 8,500 r.p.m. spindle speed to be the maximum for efficient running. There is no question but that drawing the cotton more slowly and straining it less in spinning it with ballooning it through the air, will improve the yarn, and that the spinners can tend more sides under these conditions than with a spindle speed of 9,700 r.p.m. There are mills who figure maximum production per spindle, and there are other mills who figure maximum production per dollar of wages. They do not necessarily coincide.

The limit of the size of the ring is determined by the traveler speed. A traveler will run more easily on a large ring at the same number of feet per minute. This is not the same revolutions of the spindle. The traveler goes up a very steep hill in running on a small ring, and the traveler goes up a slower pitch or

grade in running on a large ring. If the same spindle speed is preserved, it is obvious that the traveler feet per minute will be increased in proportion to the increased diameter of the ring. By running a slower spindle speed, a very considerable increase in the diameter of the ring may be accomplished.

It is also true that the heavier the yarn, the heavier the traveler, and a heavier traveler will stand a higher speed than a lighter traveler. Such a traveler as is required to make 5s to 10s yarn, and perhaps somewhat finer, is not too high a speed with present day large rings at 5,000 feet per minute, whereas to go immediately to the other extreme, the maximum size ring which could be used in making 100s yarn, together with the very small light traveler which 100s should carry, will not stand a traveler speed of much over 3,000 feet a minute. The numbers of yarn between 10s and 100s would have the traveler speed gauged between these two extremes accordingly. We would not recommend a traveler speed in excess of 4,000 feet, on 50s, although there are mills running, satisfied with the condition of a traveler speed of 4,500 feet per minute.

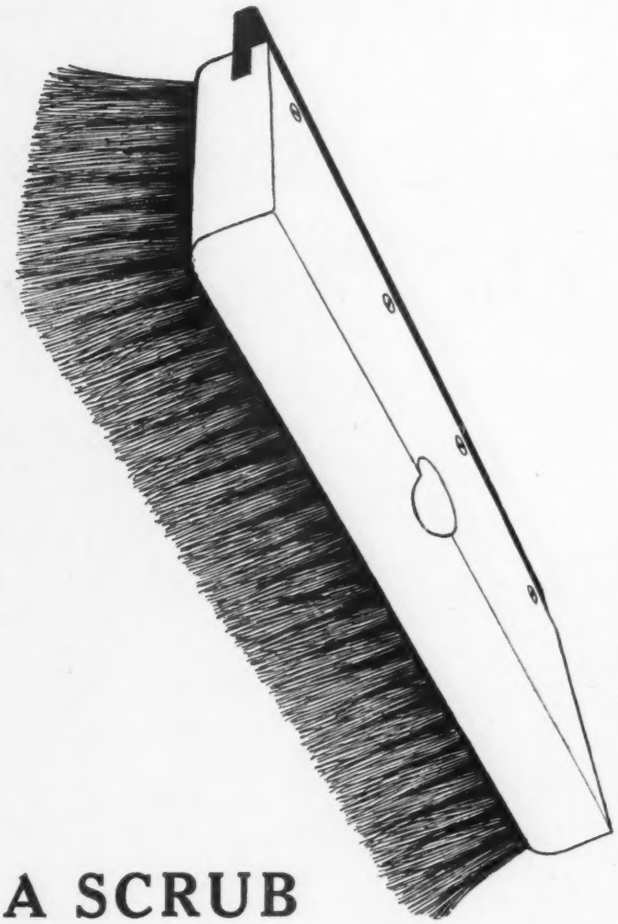
As to the traverse to use, we would consider the limit to be 7 inches, but would prefer 6½ inches. When the gauge of the frame is wide enough to prevent ballooning in appearance, a greater distance from the thread guide to the bottom of the bobbin may be accomplished. This of itself is not a gain, but the result of it is a greater distance from the thread guide to the top of the bobbin, and that is a gain. The strain of the yarn in going through the acute angles from the thread guide through the traveler to the bobbin may be greater than the strain of the yarn due to the ballooning when running from the thread guide through the traveler to the bottom of the bobbin. The length of the traverse is governed by an avoidance of these two strains.

In the August number of the bulletin published by Saco-Lowell Shops, there was a table showing the angular pull of the yarn from the bobbin to the traveler; an 11/16-inch diameter of bobbin in a 1¾-inch ring will have an angular pull of 67 degrees. This is a comfortable condition, and conforms with good practice. A ⅝-inch diameter bobbin will give about 69 degrees, and less than ⅝-inch bobbin would not run; when the pull is about 70 degrees, the yarn easily will stand the strain. It is claimed that if the yarn were to pull through the traveler to the center of the spindle, there would be no component to drive the traveler. On the other hand, if the yarn were to pull in a direction tangent to the ring, there would be no holding by the traveler to wind the yarn on the bobbin.

The actual pull of the yarn may be considered the result of two pulling forces: one toward the center of the spindle, and the other the direction tangent to the ring. The nearer the yarn pulls toward the center of the spindle, the greater the strain on the yarn. Here we get the governing factor of diameter of bare bobbin.

In direct answer to the inquiry, I would recommend a No. 1 flange ring, ⅝ circle, with 10/0 to 12/0 traveler.

CONTRIBUTOR No. 4670.



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THINNING the milk won't fat the calf. Skimping on filaments, when a many-filament yarn is required, won't protect the profits on a fine-quality cloth. It's as dangerous as excessive stretching or a reduction in the number of picks.

Du Pont was first to produce a rayon yarn in the ratio of 2½ denier per filament. Because Du Pont has had more experience . . . longer experience . . . there are seven first-class reasons why knitters and weavers find Super Extra most economical . . . more profitable.

CLEAN YARN. The economy is obvious. It means fewer interruptions in the mill . . . fewer seconds . . . less waste . . . a more uniformly fine result.

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EDITOR COTTON:

What is the largest size ring which can be used practically in spinning 50s warp yarn, with 4 × the square root of twist, made from 1 3/16-inch cotton? This question was asked recently by a contributor in the "HOW OTHER MEN MANAGE" department.

In reply, will say that we have successfully spun 50s single yarn, 4.00 times the square root of twist, at one of our mills on 1¾-inch No. 2 flange rings. We have found, however, that by replacing our regular ¾-inch bobbins with 15/16-inch bobbins, we got better yarn and could run the front roll 120 r.p.m., against 110 r.p.m. with ¾-inch bobbins. The best results were obtained with 14/0, ⅞ circle.

S. S. (N. C.)

Comments on "Three Processes of Roving Versus Four."

This all started when "No. 4689" commented on Marshall Dilling's Arkwright test which caused him to cut out one process of roving. This month "L. W. N." points to some errors and gives his views.

EDITOR COTTON:

In the January issue of COTTON, "CONTRIBUTOR NO. 4689" shows with a few brief calculations how "it is possible to make 12:00-hank roving with four processes cheaper than 10.53-hank roving can be made with three processes. He closes his discussion with these words, "I shall be pleased to have the opinions of your readers, *especially* those who *do not agree* with me."

I am one of those who most emphatically do not agree with him.

Such costs calculations emphasize most strongly the statements in the very excellent article, which was also in the January issue, entitled, "What Do the Textile Mills Need Most in 1930?"

Kenneth S. Tanner, of Spindale, N. C., tells of the inadvisability of accepting any order which fails to show a profit, which is very sound advice.

D. S. Cook, of Opelika, Ala., said, "to keep selling prices on levels that will insure reasonable returns."

C. C. Cobb, of Geneva, Ala., told of means by which some mills had been able to pay better wages and at the same time lower operating costs. But, may I add, not by such cost calculations as used by "CONTRIBUTOR No. 4689."

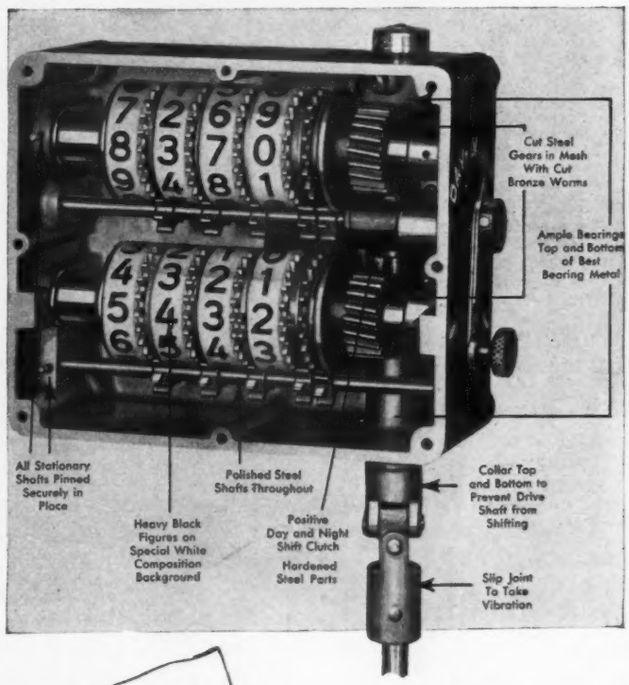
L. W. Clark hits the nail on the head when he says, "Some progress has been made in regard to properly determined costs, though most mills I believe are woefully behind the times in regard to this one matter and when the larger percentage of them install intelligent cost systems it will be better for the individual mills and the industry as a whole." More power to him.

I am going to include the calculations of "CONTRIBUTOR No. 4689" in order that where it is necessary to make reference to his calculations this may be done conveniently.

Organization Using THREE Processes of Roving.

Machine	Weight	Prod. Const. for 1 Hr.	Speed	Twist Mult.
Picker	12 oz.	2.65	6 r.p.m.	
Card	50 grs.	.0193	8 r.p.m.	
Comber	42 grs.	.0016	120 n.p.m.	
Drawing	42 grs.	.00082	400 r.p.m.	
Slubber	.88 hk.	1.04	700 r.p.m.	1.0
Inter.	2.50 hk.	1.686	1000 r.p.m.	1.1
Speeders	10.53 hk.	2.14	1200 r.p.m.	1.2
Spinning	60s	16.6	9000 r.p.m.	3.5

QUALITY
AND . . . .
HEAVY DUTY
Construction Features of Productimeter Pick Counters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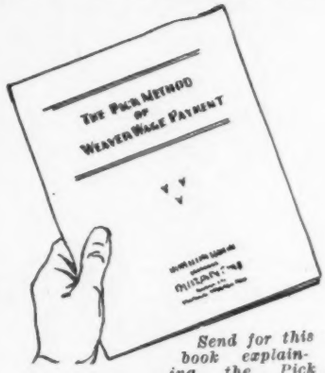
All Stationary Shafts Pinned Securely in Place
Heavy Black Figures on Special White Composition Background
Polished Steel Shafts Throughout
Positive Day and Night Shift Clutch
Hardened Steel Parts
Collar Top and Bottom to Prevent Drive Shaft from Shifting
Slip Joint To Take Vibration



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Productimeters
THE SPEEDOMETERS OF INDUSTRY

Production Per Hour, Using Three Processes of Roving

Picker ..... 2.65 × 6 × 12 = 190.8 lbs.
Card ..... .0193 × 8 × 50 = 7.72 lbs.
Comber ..... .0016 × 120 × 42 = 8.06 lbs.
Drawing .... .00082 × 400 × 42 = 13.77 lbs.
Slubber ..... $\sqrt{\frac{.88}{1.04}} = .93 \times 1 = .93$ T.P.I.;

$$\frac{.93 \times .88}{} = 1.27 \text{ lbs.}$$

Inter. ..... $\sqrt{\frac{2.50}{1.686}} = 1.58 \times 1.1 = 1.738$ T.P.I.;

$$\frac{1.738 \times 2.50}{} = .388 \text{ lbs.}$$

Speeders .... $\sqrt{\frac{10.53}{2.14}} = 3.24 \times 1.2 = 3.888$ T.P.I.;

$$\frac{3.88 \times 10.53}{} = .052 \text{ lbs.}$$

Spinning .... $\sqrt{\frac{60}{16.6}} = 7.74 \times 3.5 = 27$ T.P.I.;

$$\frac{27 \times 60}{} = .0102 \text{ lbs.}$$

Organization Using FOUR Processes of Roving.

Machine	Weight	Prod. Const. for 1 Hr.	Speed	Twist Mult.
Picker	12 oz.	2.65	6 r.p.m.	
Card	50 grs.	.0193	8 r.p.m.	
Comber	46 grs.	.0016	120 n.p.m.	
Drawing	46 grs.	.00082	400 r.p.m.	
Slubber	.60 hk.	1.04	700 r.p.m.	1.0
Inter.	1.50 hk.	1.686	1000 r.p.m.	1.0
Speeders	4.00 hk.	2.14	1200 r.p.m.	1.1
Jacks	12.00 hk.	2.5	1400 r.p.m.	1.2
Spinning	60s	16.6	9000 r.p.m.	3.5

Production per Hour, Using Four Processes of Roving.

Picker ..... 2.65 × 6 × 12 = 190.8 lbs.
Card ..... .0193 × 8 × 50 = 7.72 lbs.
Comber ..... .0016 × 120 × 46 = 8.83 lbs.
Drawing .... .00082 × 400 × 46 = 15.08 lbs.
Slubber ..... $\sqrt{\frac{.60}{1.04}} = .774 \times 1 = .774$ T.P.I.;

$$\frac{.774 \times .60}{} = 2.24 \text{ lbs.}$$

Inter. ..... $\sqrt{\frac{1.50}{1.686}} = 1.23 \times 1 = 1.23$ T.P.I.;

$$\frac{1.23 \times 1.50}{} = .913 \text{ lbs.}$$

Speeders .... $\sqrt{\frac{4}{2.14}} = 2 \times 1.1 = 2.2$ T.P.I.;

$$\frac{2.2 \times 4}{} = .243 \text{ lbs.}$$

Jacks ..... $\sqrt{\frac{12}{2.5}} = 3.46 \times 1.2 = 4.15$ T.P.I.;

$$\frac{4.15 \times 12}{} = .0502 \text{ lbs.}$$

Spinning .... $\sqrt{\frac{60}{16.6}} = 7.74 \times 3.5 = 27$ T.P.I.;

$$\frac{27 \times 60}{} = .0102 \text{ lbs.}$$

Comparative Cost.

	Three Processes		Four Processes	
Picker	$\frac{.6262}{190}$	= $.003295	$\frac{.6262}{190}$	= $.003295
Card	$\frac{.04795}{7.72}$	= .006211	$\frac{.04795}{7.72}$	= .006211
Comber	$\frac{.09939}{8.06}$	= .012331	$\frac{.09939}{8.83}$	= .011255
Drawing	$\frac{.0702}{13.77}$	= .005098	$\frac{.0702}{15.08}$	= .004655
Slubber	$\frac{.00566}{1.27}$	= .004456	$\frac{.00566}{2.24}$	= .002526
Inter.	$\frac{.00224}{.388}$	= .005773	$\frac{.00224}{.913}$	= .002475
Speeder	$\frac{.002355}{.052}$	= .045288	$\frac{.002355}{.243}$	= .009691
Jack			$\frac{.001379}{.0502}$	= .027470
Spinning ...	$\frac{.00048}{.0102}$	= .047058	$\frac{.00048}{.0102}$	= .047058
		$.129510		$.114636

$ .129510
.114636
$ .014874 = Difference;

Increased cost to use three Processes: $\frac{.014874 \times 100}{.129510} = 11.4\%$

The fallacy in the calculations of "CONTRIBUTOR No. 4689" lies in the fact that the same cost constant should not be used for three- and four-process calculations. The reason for this is perhaps best explained by figuring the number of machines required at each process and the probable payrolls to get at the real costs.

Suppose, for example, that we take a mill of 30 spinning frames, producing 8,100 lbs. of 60/2 warps, cones and skeins per 120 hours. And, by the way, I am running such a mill, so I am doubly interested in the discussion. Allowing the same wastes in both calculations and using the productions used by "CONTRIBUTOR No. 4689," the spindles required at each process will be:

Four Processes.

Jacks, 8100 + 2 per cent = 8262 lbs. of 12 hk. roving required.

$$\frac{8262}{.0502 \times 120} = 1380 \text{ Jack spindles.}$$

Speeders, 8262 + 1 per cent = 8344 lbs. of 4 hk. roving required.

$$\frac{8344}{.243 \times 120} = 286 \text{ Speeder spindles.}$$

Intermediates, 8344 + 1 per cent = 8427 lbs. of 1.50 hk. roving required.

$$\frac{8427}{.913 \times 120} = 77 \text{ Intermediate spindles.}$$

Slubbers, 8427 + 1 per cent = 8510 lbs. of .60 hk. roving required.

$$\frac{8510}{2.24 \times 120} = 32 \text{ Slubber spindles.}$$

Drawing, 8510 + 1 per cent = 8595 lbs. of Drawing sliver required.

$$\frac{8595}{15.08 \times 120} = 4.75 \text{ deliveries of Drawing.}$$

Combers, 8595 + 2 per cent = 8770 lbs. of Comber sliver required.

$$\frac{8770}{8.83 \times 120} = 8.25 \text{ Combers.}$$

Three Processes.

Speeders, 8100 + 2 per cent = 8262 lbs. of 10.53 hk. roving required.

$$\frac{8262}{.052 \times 120} = 1325 \text{ Speeder spindles.}$$

And right here we are up against it. Referring to our four process requirements we find only 286 speeder spindles. It will, therefore, be necessary to make the 10.53 on the jacks. To be of any use to most of us, these organizations would be considered as a possibility for changing our present four process layouts to three process layouts with the idea of reducing costs. Few of us have the opportunity to figure machinery for new mills, so if we use our jacks our production will be:

$$\frac{2.50}{3.888 \times 10.53} = .0616, \text{ instead of } .052.$$

Then the speeder requirements will be: $\frac{8262}{.0616 \times 120}$ = 1118 spindles.

And using the method of "CONTRIBUTOR No. 4689," our 10.53 hank roving cost is reduced from $\frac{.002355}{.052}$

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Please let us hear from you if there is any further information we can give you or your associates. It will be a pleasure to respond.

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Sales Manager
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«Copy of a letter to Dr. Gage»

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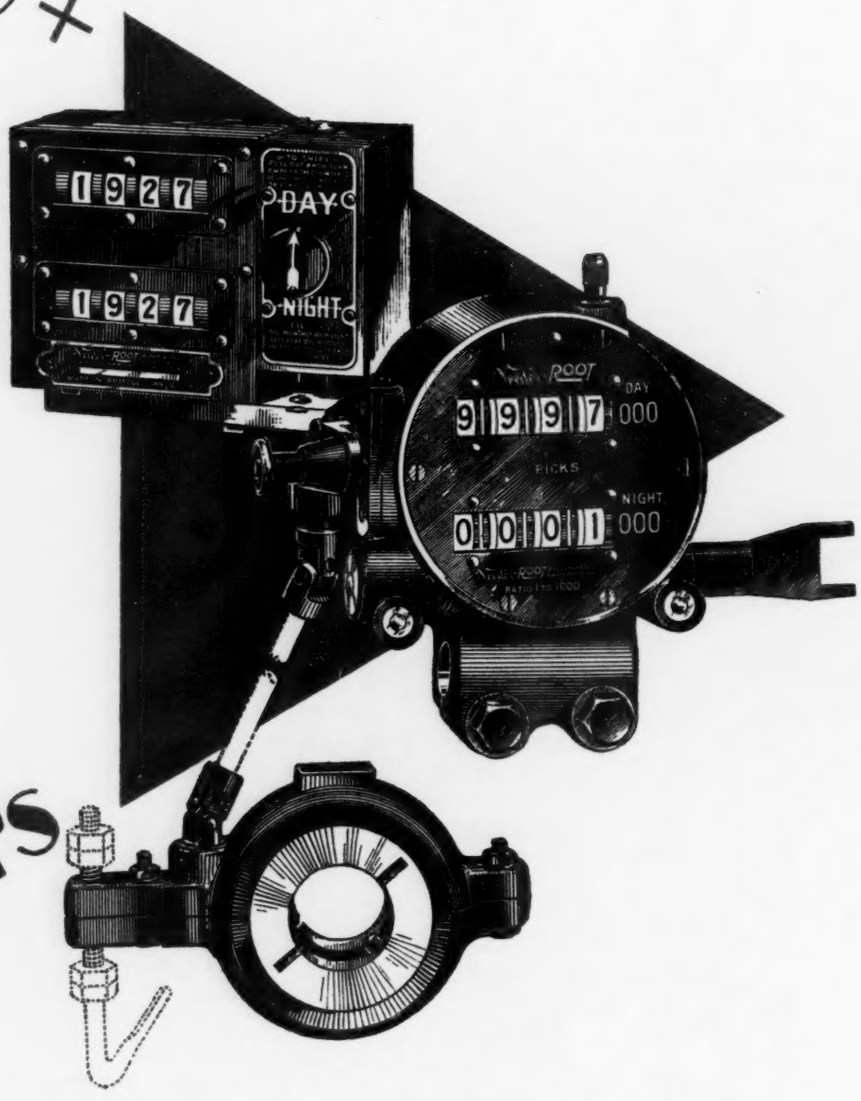

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$= .045288$ to $\frac{.001379}{.0616} = .022386$. This reduces the total cost on the layout, which is given by the difference between .045288 and .022386, or .022902, which is more than the .014874 shown by "CONTRIBUTOR No. 4689" as the total difference between three and four processes.

But even now our methods are incorrect, as we shall presently see, for the same cost constants cannot be used for three and four process calculations.

Intermediates, 8262 + 1 per cent = 8344 lbs. of 2.50 hk, roving required.

$$\frac{8344}{.388 \times 120} = 179 \text{ Intermediate spindles.}$$

Referring back to our four process layout, we find only 77 intermediate spindles required. It will be necessary, therefore, to use the speeders for our 2.50 hank roving.

The speeder production on 2.50 hank roving will be: $\frac{2.14}{1.738 \times 2.50} = .492$, instead of .388. Then,

$$\frac{8344}{.492 \times 120} = 141 \text{ Speeder spindles required.}$$

Slubbers, 8344 plus 1 per cent = 8427 lbs. Slubber .88 hk. roving required.

$$\frac{8427}{1.27 \times 120} = 56 \text{ Slubber spindles required.}$$

Since it is unlikely that our slubber will have less than 60 spindles it will do for our three process work.

Drawing, 8427 + 1 per cent = 8510 lbs. of drawing sliver required.

$$\frac{8510}{13.77 \times 120} = 5.15 \text{ deliveries required.}$$

The drawing will either have to be speeded up so that we can use our five deliveries, or another delivery will have to be provided. We will use the latter solution in our later calculations.

Combers, 8510 + 2 per cent = 8680 lbs. of 42 grain comber sliver required.

$$\frac{8680}{8.06 \times 120} = 9 \text{ combers.}$$

If we have 6 x 3 jacks with 200 spindles each; 7 x 3½ speeders with 160 spindles each; 9 x 4½ intermediates with 120 spindles each; and 11 x 5½ slubbers with 60 spindles each, then our machinery requirements will be:

	Three Processes	Four Processes
Combers	Nine	Nine
Drawing	Six deliveries	Five deliveries
Slubber	One frame	One frame
Intermediate		One frame
Speeders	One frame	Two frames
Jacks	Six frames	Seven frames

Now using the cost constants of "CONTRIBUTOR No. 4689," the costs will figure:

	Three Processes	Four Processes
Picker	.003295	.003295
Cards	.006211	.006211
Combers	.012331	.011255
Drawing	.005098	.004655
Slubbers	.004456	.002526
Intermediates		.002475
Speeders	$\frac{.002355}{.492} = .004786$	.009691
Jacks	$\frac{.001379}{.0616} = .022386$	.027470
Spinning	.047058	.047058
Totals	.105621	.114636

Now, .114636 — .105621 = .009015, and $\frac{.009015 \times 100}{.105621} = 8\frac{1}{2}$ per cent, which is the increased cost of four processes over three processes.

Incidentally, I think "CONTRIBUTOR No. 4689" should have divided by .114636 instead of .129510 to show the increase in cost of three processes over four processes. This would make the percentage 12.9 instead of 11.4.

A brief study of the machinery requirements shows that the three process 10.53-hank roving can be made cheaper than the 12.00-hank four process roving. Can "CONTRIBUTOR No. 4689" run seven jacks, two speeders, one intermediate, and one slubber cheaper than six jacks, one speeder and one slubber?

Figuring the entire labor cost of our 30 spinning frame mill at current wages and properly distributing the indirect labor I find the following facts:

	Four Processes			Three Processes		
	Payroll	Cost per mch. hr.	Cost per pound	Payroll	Cost per mch. hr.	Cost per pound
Opening	$19.45		$.00240	$20.24		$.00249
Pickers	20.36	.33933	.00251	21.16	.35266	.00261
Cards	55.40	.01923	.00684	56.40	.01958	.00696
Combers	68.14	.06309	.00841	68.90	.08231	.00850
Drawing	11.04	.01840	.00136	11.43	.01588	.00141
Slubber	26.84	.003727	.00331	29.39	.00408	.00362
Int.	26.84	.00186	.00331			
Speeders	38.40	.002	.00472	30.94	.000806	.00382
Jacks	112.63	.00067	.01390	106.34	.000637	.01312
Spinning	325.85		.04022	327.05		.04037
Spooling	122.53		.01512	122.97		.01518
Twisting	131.60		.01624	132.20		.01632
Finishing	194.20		.02400	195.00		.02407
Packing	18.00		.00222	18.06		.00223
Totals	$1171.28		$.1446	$1140.08		$.1407

Therefore, .1446 — .1407 gives the difference in the cost per pound to make three and four process roving, which is .0039 cents per pound. Hence, $\frac{.0039 \times 100}{.1446} = 2.7$ per cent cheaper by using three processes rather than four.

It is interesting to note that the three-process layout reduces the total card room cost but raises all subsequent department costs. The reason for this is that the card room direct labor cost being lower bears a smaller portion of the indirect labor leaving a larger portion to be distributed over the other departments of the mill. The table of cost constants per machine hour shows why the same constants cannot be used for three and four process calculations. The fact that the rearrangement affects the department costs through the entire mill also indicates that it is better to refigure entire mill costs whenever a change is made in any one department.

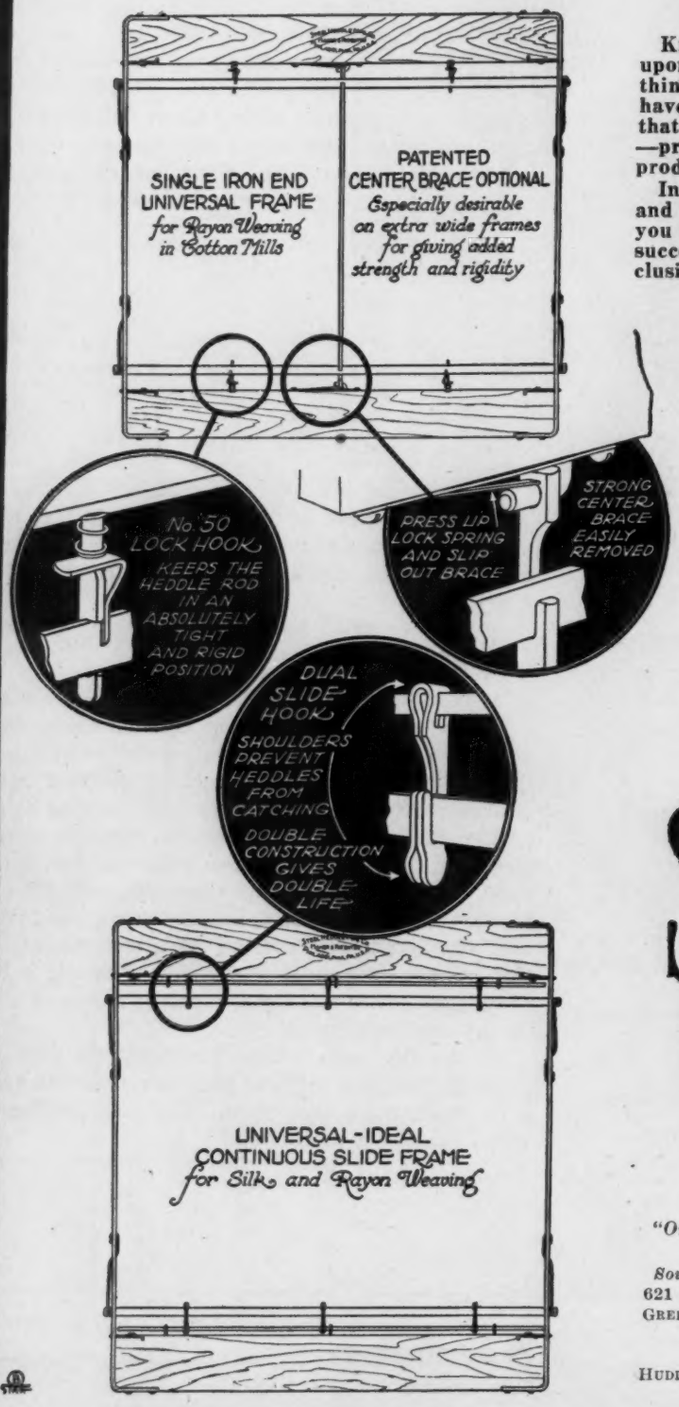
I heartily agree with "CONTRIBUTOR No. 4689" when he says that the four process roving will produce a stronger, more even yarn. The organization I am using for 60s is as follows:

	Size	Draft	Speeds	Twist M.
Pickers	11 oz.			
Cards	40 grs.		4½ r.p.m.	
Combers	60 grs.		110 n.p.m.	
Drawing	62 grs.		300 r.p.m.	
Slubber	.50 hk.	3.72	525 r.p.m.	1.0
Intermediates	1.20	4.80	600 r.p.m.	1.0
Speeders	3.00	5.00	1140 r.p.m.	1.05
Jacks	10.50	7.00	1530 r.p.m.	1.1
Spinning	60s	11.43	9000 r.p.m.	4.0

Any suggestions or comments on this layout will be greatly appreciated.

L. W. N. (N. C.)

FRAMES THAT ARE BETTER!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UNIVERSAL-IDEAL CONTINUOUS SLIDE FRAME
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Steel Heddle Frames possess utmost rigidity made possible by heavy steel ends scientifically braced.

All wood parts are selected and prepared with great care—air dried at least three years, planed to exact thickness and carefully finished to avoid absorptions of humidity.

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A Reader Comments on "What are We Doing About This?"

EDITOR COTTON:

The article "What Are We Doing About This?" in the June number of COTTON is worthy of a great deal of serious thought. I agree fully with the facts contained therein, but while that contributor suggests that the solution to the problem is simple, on the other hand I think it is really the most serious that any mill man could attempt to put into use. For the benefit of readers I will quote liberally from this brief article in discussing it.

Before doing so, however, I doubt if anyone will disagree that the textile industry, in one form or another, is the oldest of all known industries. The earliest histories known tell of hand cards and hand looms which were used in the homes. From that early start has developed very gradually the present methods of cotton manufacturing.

Now let me quote from your contributor in the June number the following incident, which he says, and truthfully so, must be a vivid recollection to those of us whose textile experience encompasses the last two decades. He quotes the following conversation:

"Applicant for work:

'Is this the superintendent?'

Superintendent:

'Yes.'

Applicant for work:

'Need any help? I got one weaver, two spinners, one doffer and I sweeps or lays up roping, and my boy Jim, what ain't right bright, hauls filling, and Mandy spools when she's able.'

Superintendent:

'I could use a good weaver and a couple of good spinners, but I don't need the rest of your family.'

Applicant for work:

'Well, I reckon we will move on and see if we can't all get a job.'"

In commenting upon this your writer says, "What was too often the result of such an interview when you were real short of spinners and weavers? You know that you made a job for the old man; you made a job for Jim and you made a job for Mandy. You didn't have much for them to do; they didn't do much, but you thought if you could keep the job going, the extra expense wouldn't make much difference.

"The old family system of employment, much to the advantage and credit of all concerned, is extinct, except in isolated cases, but practically every mill organization will be found to be more or less honeycombed with jobs for which the pay is low, and the help that fills these jobs will be found to be the most expensive and highest paid for the return received of any on the payroll.

"Walk through the mill and take a look at the two old men sitting on a box and dozing over the waste table, occasionally picking out a piece of good cotton, but most of the time sitting and thinking. You might not think they were the highest paid men in the organization. But, investigate and you will find they are doing about one-fifth of a day's work, and receiving two-thirds of what an able man's pay should be. Send

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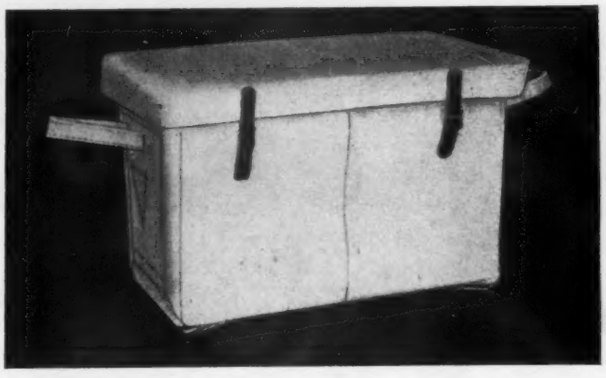

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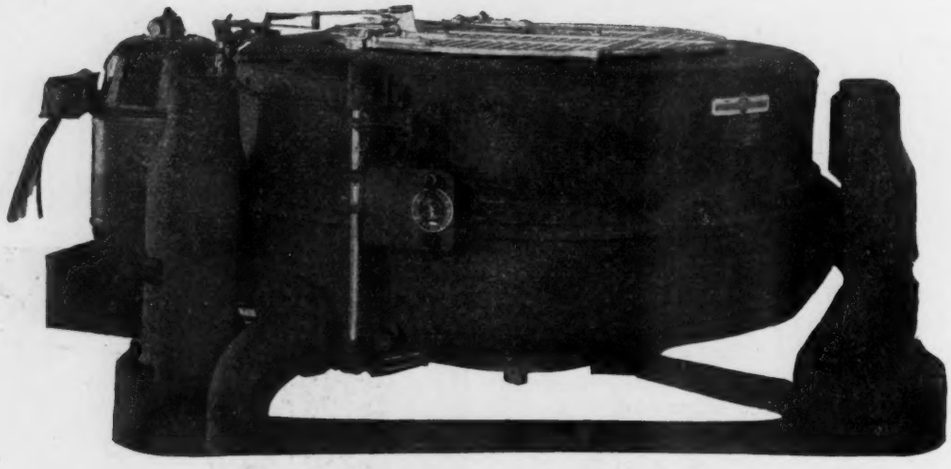

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B779

them home and put one man on the two jobs and give him three-fourths of the pay received by the two of them. Then stop and think what you have accomplished:

"1st. You have reduced the cost of manufacturing.

2nd. You have increased the quality and quantity of the work done.

3rd. You have improved the personnel in that department.

4th. You have improved the working atmosphere by introducing an element of alertness and energy as opposed to two elements of inertia.

5th. You have placed the able and capable operatives in a better position to take care of those in their family who are not able to work.

6th. You have raised the average pay received by your operatives.

7th. You have raised the standing of the industry in the eyes of the public."

In the next paragraph to be quoted from his article, the writer in the June number tells of the following incident:

"A college boy, home for his vacation, obtained a job hauling filling in a weave room. In two weeks he quit. He was bored to death because he didn't have enough to do to make the time pass away agreeably. He would get all the filling boxes filled and have to wait idly by for from a half hour to an hour before he could fill them again. One filling hauler could have done the work of two in that weave room. Better men could have been employed and paid more money, and yet the work would have cost less."

This man concludes his excellent article with the following suggestion:

"Take the average mill and turn the searchlight of intelligent and thoughtful investigation on each job, not with the idea of replacing the present help with cheaper help, but with the idea of making a job for an able, energetic operative, to whom you can afford to pay a good wage and at the same time reduce your cost of production. The weakest and least competent operating executive in the industry can reduce costs by cutting wages, which may at times seem to be a necessary step for existence, but it is the strong, far-seeing and intelligent man who can reduce costs by raising wages. The competent executive keeps before him, week by week, his labor cost per pound. Let him place with this figure, his average weekly wage. When at the same time the first figure is decreased and the latter figure increased, he should experience a peculiar gratification that he has the ability to be responsible for a progressive step in his establishment."

Now, I should like to make some comments on his statements and the subject in general. In the past, families as a whole have worked in the mill, the father probably being either a loom fixer or a good weaver, a second hand or third hand or card grinder; having worked himself into such a position through years of experience. His wife works, either weaving, spinning or perhaps running drawing. The children worried along in school as long as the law compelled them to, and then came into the mill as oilers or filling boys and knocked around on various jobs.

The Loom Lubrication Problem *and its* Solution

The Weave Room operator has his troubles. On the one hand he must keep up production — and that means continuous lubrication. On the other hand goods must be protected from oil spots.

And every loom operator knows how a liberal use of liquid oil will result in oil spots on the product.

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Picture in your mind such a family, going to bed at 8 o'clock at night and getting up at 5 o'clock in the morning in the old days. If anything happened to upset the old man, he took the family and moved, and the condition which your contributor so excellently described in quoting the conversation resulted.

Dad had to get jobs for his whole family. Some of the most prosperous mills in the past not only tolerated but advocated such a system, and there is no doubt but that representatives were sent many miles away to import large numbers of complete families, the larger the better, into the mill village.

Your article in the June number intimates that this system is obsolete, that is putting it altogether too mildly. It is not only obsolete, but it is a cancer that will destroy the mills in time. Not that it is the old time family's fault, for they are the people who made America what it is, and deserve all the credit they have earned, but conditions have changed, and manufacturing has changed, and laws and ideas have changed, and that is what outlaws this system.

Now before I recite experiences on the subject, which may not interest the reader, let me say this, and then you have the meat of the idea and can stop reading if this bores you: Self preservation is the primary instinct, and every man, regardless of what position he holds, is looking out for himself. Now, if any executive who tries to change this system, if it is already in his mill, must be sure he has studied every angle of the problem and found the solution, and that his superiors and subordinates are with him before he makes a single move; otherwise he will find himself with his hat in his hand, applying for a job somewhere else himself. After the local condition has been carefully studied and a thorough plan worked out, put it into effect, and go through with it, but as Theodore Roosevelt once said, "Don't draw unless you intend to shoot."

Now consider our friend's example of the college boy who has worked during vacation hauling filling and quit because he couldn't get enough work to keep him busy. Suppose the second hand had put him to sweeping, oiling, or cleaning out the reed rack, after he had his filling boxes full. Either one of two things might happen: When he realized that he was doing more than the other filling boys, he would kick, or else if he kept going the other filling boys would get him down to their speed, one way or another. The only right way, and the only way to satisfy everyone, is to plan the filling boy's work to what can be done in a day, by a normal boy, and then make them all do it. It can be planned so the will not have too much time to lay around, as each one will be busy. Then if a college boy comes in for vacation work, it is up to you to put him on a job that he cannot learn to do better than the regular man in two week's time. Would the college boy have been willing to stay on that job and do as much work as he did, when he quit? Lindbergh flew across the ocean once, too, you know.

Suppose, for example, that you pay filling boys $12.00 a week. If you put one boy on, in place of two, and give him three-quarters of the combined pay, he would earn $18.00 a week. If he can run the two jobs, by all means let him.

If such changes are to be made, it is bad practice to base the pay for the new job in proportion to the old one, because then everyone will begin to figure proportion on their pay. Every move should be made in a clean-cut and decisive manner, and carefully studied upon the basis of information secured in an accurate way.

Once there was a mill which decided to put on a night run, as they could not keep up with their orders, and they did not want to enlarge the plant as they expected the extra business would last only a couple of years. They took a young man who had been working in the plant, learning the business, and made him night overseer. The assistant overseer handed him a schedule of help to employ, which was simply a copy of the regular day run payroll. The young man spoke up and said, "I don't need all this help." He, no doubt, knew he would have to chase all over the yard every night to round up that gang of extra help.

After he had crossed off the list a lot of roving hands, sweepers, oilers, truckers, etc., he was told that he would have to hire them, because the day organization would be in wrong if he did not.

What an opportunity for study of conditions existed from that tip, but nothing happened. The young man did as he was told, and hired the help as per schedule. On every unskilled labor job, he hired a machinist, plumber, carpenter, street car conductor—anything but a man who was accustomed to the old mill system.

That night gang was a joke all over the mill the first few weeks of its run, for it certainly was a motley crew. By the time it got settled down to running, about half the extra hands had gotten through, and the young overseer had to fill their jobs. The superintendent had a lot of sarcasm about running short of street car conductors, but that night gang produced goods, better than the mill had ever made. They had less waste, and the cost per pound for labor was about two-thirds of the day cost.

The condition pictured in your June article is not a rare one, but is a thing that goes on in every cotton mill in the country. How to change it, is a serious problem. Just stop and think of the efficiency of the automobile industry, and compare it with our old cotton manufacturing industry.

M. W. H. (MASS.)

Report of Georgia Meeting

(*Continued from page* 617.)

that on this, which is long draft, the biggest advantage is that they require less picking; once a week instead of six or eight times a day. Mr. Towers pointed to this as a saving in labor as well as a means of keeping bunches out of the yarn.

J. C. Edwards said they have revolving clearers on their long draft spinning, with which they are equipped, and also the bunchless cleaners, "and they make a nice combination." His revolving clearers work on the front roll. He said they had ordered a special clearer, heavier than ordinary, in order to get a firmer, more compact distribution of the clearer waste, but that he has no trouble. "I cannot see how

the clearer would rough up the cot," he said. "It wouldn't said Mr. Towers, unless there was a drag of some kind."

Long Draft Spinning.

The second spinning question brought up the question of long draft spinning, asking: "What status has long draft spinning reached? Has it any advantage over the regular draft, with the same staple of cotton, on breaking strength? What are the best roller settings for long draft rolls? What percentage, if any, difference, using long draft spinning, and the relative cost compared to regular draft? (b) In this connection, we should appreciate reports of experiments and tests with the rubber type of flexible or elastic top roll. What is the highest draft that has been accomplished successfully with it?"

J. C. Edwards, superintendent of the Martha Mill, Thomaston, was the first man called upon in this connection. Mr. Edwards described his equipment as being of the type using one leather belt passing over the bottom middle roll and extending close up to the front rolls. Directly behind the front top roll is a small self-weighted roll which revolves in contact with the leather belt. Mr. Edwards uses 1 1/32-inch cotton, and the distance between his back and middle rolls is 1⅞-inch, with 1⅝-inch between the middle and front roll. He submitted to varied inquiries, and his replies and other statements are condensed in the following report.

Mr. Edwards stated that he is making 23s out of 2.00-hank single roving, and is able to maintain the breaking strength secured formerly with 4.00-hank double roving. He believes a big advantage of the new system is the saving thus effected in the card room. He makes 15s out of 1.05-hank instead of 2.60-hank double.

He was asked what change was made in the preparation of the roving for the long draft, and replied that, while it wasn't necessary, they did reduce the twist somewhat, using a multiple of 1.10. He stated that on the new system he has a break draft of 1.30, and a total draft of 11.33. Referring again to the card room saving, he pointed out that with 28 speeders he is furnishing roving that would take 120 machines under the older method. He expressed the opinion that in going above a total draft of 14.50 on the new system, the breaking strength would suffer.

Mr. Towers asked concerning the function of the self-weighted small roller directly behind the front top roll, and Mr. Edwards pointed out that this gave a control of the fibers, paralleled them, and provided for a slip which took care of varying lengths of staple. He said that they were originally set up to use 3.00-hank double roving on the system, but that an emergency arose, and they tried 2.00-hank single, and as they were able to maintain their requirements, they stayed on it. He added that the system "has a decided advantage for a mill that runs different staples of cotton because it is not necessary to change the settings," explaining that the slip draft created by the apron and small roll takes care of different lengths of staple.

George S. Elliott was asked for his experiments on the same system. He said he had found an increase of five to eight per cent in breaking strength consist-

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ently, with the new system, on which he is using 3.00-hank double instead of 4.00-hank double, making the 3.00-hank on two processes of roving instead of the three processes used on the 4.00-hank. This, Mr. Towers pointed out, cut out one process in the card room. O. W. Smith, overseer of spinning, The Trion Co., said they have 55,000 spindles on long draft, and get a better breaking strength. Mr. Towers asked how the looms run, and Mr. Smith replied that the end breakage is not as great on the long draft yarn, either in spinning or weaving.

"We had more ends down on the long draft in spinning," said Mr. Elliott, "but less on the looms, considerably," drawing the inference that "the weak places broke down on spinning instead of in the loom." Mr. Edwards said their spinning end breakage on the long draft was higher, but he felt this was due to the single roving.

"Then you must have the roving freer of thick and thin places," Mr. Towers observed. "Yes," replied Mr. Edwards.

Experience of A. E. Massey.

A. E. Massey, general superintendent, Thomaston Cotton Mills, was asked to discuss his experience on his 50,000 spindles of a long draft type using two leather aprons in the place of the middle roll. He reported that their results had shown that with the same cotton, spinning the same yarn, they got an increase of three to five per cent in strength. Continuing, Mr. Massey said:

"I think the term 'long draft' is a misnomer. Mr. Edwards gets a draft of 11.50. That isn't *long* draft. We have one mill on 13s that is drafting 13.00 under the old method. Recently I made a visit to the Carolinas and encountered two mills on the same work, 40s; one using 4.00-hank and another 8.50-hank.

"In my opinion, it isn't a matter of how *much* we are drafting, but it is a matter of *fiber control;* it's keeping the fibers from losing their position as they are being fed forward to the delivery roll.

"We have 50,000 spindles, spinning 23s from 2.80-hank double roving. When you get to the bottom of drafting, the whole theory is the cotton you use, the staple in it, and the preparation back of the spinning."

Mr. Towers asked as to the preparation necessary back of the spinning. Mr. Massey said, "it depends on what you are going to use the yarn for. I knew of a mill making 13s from .74-hank slubber roving, and they claimed it was satisfactory for *their* purposes, but when we tried it, it cost us $35,000 for roving equipment."

"If you fed the same roving to an old-type frame and to one of the new type, how much better strength would you get from the new type?" asked Mr. Towers, and Mr. Massey expressed the opinion that "if you got more than 1 or 1½ per cent better you would be lucky."

"Would you consider going back?" asked Mr. Towers.

"That would depend," answered Mr. Massey. "I think when you consider any system you should first have your objective; what you want to accomplish. If you were building a new mill, the floor space and reduction in labor would be important, and there are many other factors. I might say that our company has recently purchased 20,000 additional spindles of this equipment."

"Well, that speaks for itself," said Mr. Towers.

Mr. Rogers asked concerning the life of the leather aprons used in this system. Mr. Massey was unable to supply figures, because apparently this is longer than the period during which he has had the system installed.

The Belger Type Middle Roll.

Chairman Towers next brought up the subject of the Belger type of roll, which he described as being constructed of a small iron gudgeon with a rubber web around it, over the top of which is slipped a regular leather cot. The rubber web construction permits the surface to be pushed in; it is flexible, he explained. This roll is used as the middle top roll, with a slight weight on it, and the surface, when pressed against the middle bottom steel roll, follows the contour of the steel roll, and so gives a "balloon tire" contact to the roving, holding onto it up to a point closer to the bite of the front roll.

Mr. Land of Lindale reported that his experiments on this roll had been done in a small way, that he had spun 21s from 1.25-hank, with a breaking strength about equal to normal spinning; and that when he spun this from 1.75-hank, he got two pounds increase in strength.

Mr. Massey here brought out that it would be much better in subsequent reports and discussions if references to breaking strength were based upon Draper's new standard, for example; that to say one's breaking strength is increased so much or decreased so much, means little without a definite basis to go by. He said there's no need in a man's fooling himself, and that even in his own calculations he should base his progress upon some established standard of comparison.

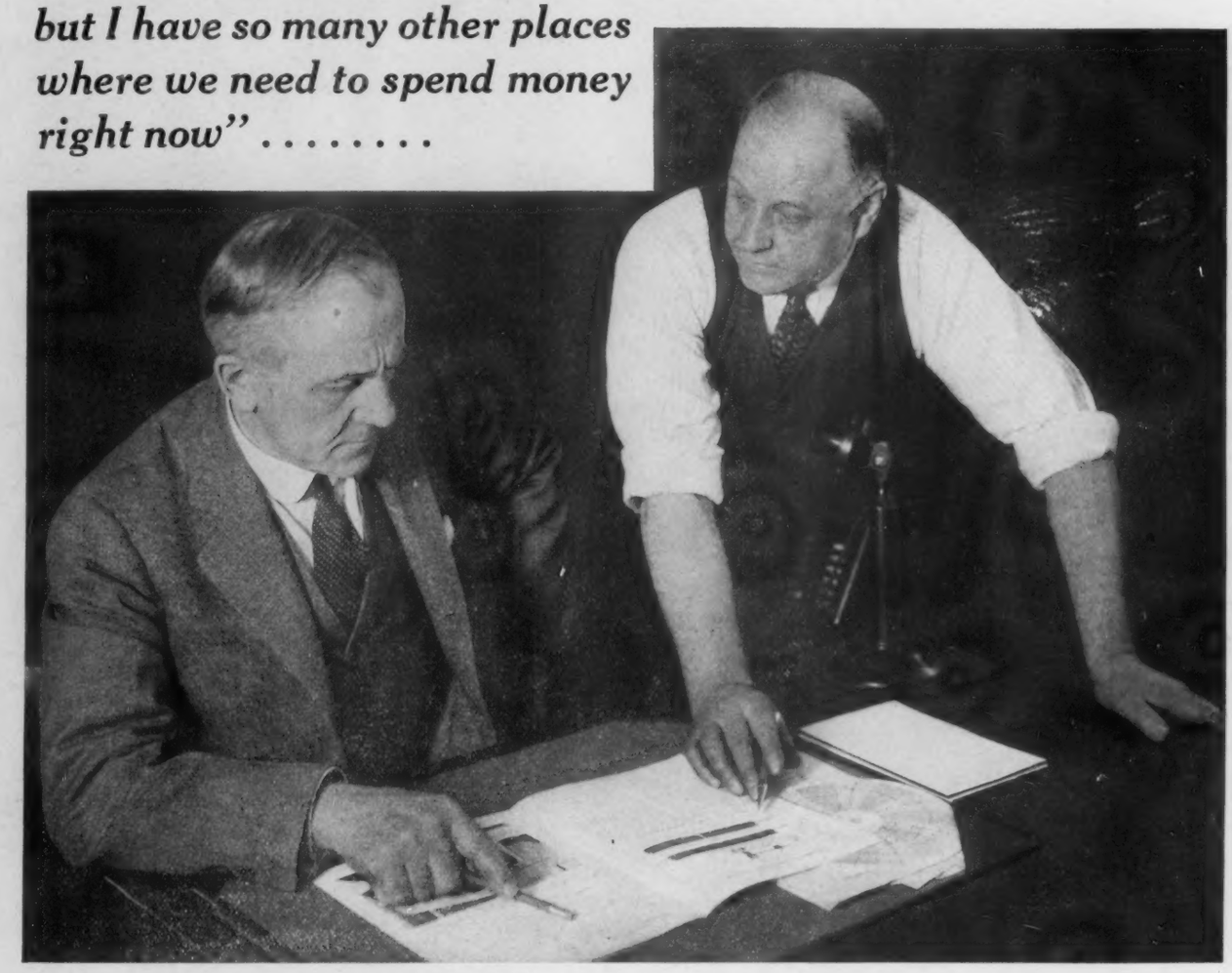
Reverting to the Belger roll, Mr. Towers said, "we have tried some and they have been running about six months, spinning 12s yarn from 1.00-hank roving, where we usually use 1.45-hank." Mr. Elliott asked about the life of this type of roll, but no one present had been running them sufficiently long to determine this.

Cork Rolls in Spinning.

The chairman next asked for experiences with cork-covered rolls in spinning. J. C. Platt, superintendent, Aragon Mills, Aragon, Ga., reported that he had run cork rolls, all three top rolls, for eight or nine months before re-buffing, but that after the re-buffing the cork flaked. He explained, however, that the manufacturers were furnishing to him now a different character of cork which, he understands, will permit re-buffing satisfactorily. He reported that in running the cork rolls, using Middling cotton, his breaking strength was maintained, and that he experienced no difficulty from hard ends.

Johnston McCorkle was asked to report the experience of the Fulton Bag & Cotton Mills. He said at first they started with only the front roll covered with

"I realize the advantages of Automatic Slasher Regulation—but I have so many other places where we need to spend money right now" . . . . . .



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AN ACCIDENT TURNS OUT TO BE A BONANZA

TO reduce the cost of manufacturing, a well-known Rhode Island mill had extended its roving frame jobs so that every employee had more spindles to look after. However, jobs were not changed until careful figuring definitely established the amount of work each hand had to do. Outside of a few complaints from chronic kickers, all went well for about a month, when suddenly the work began to run badly on the fine frames and the superintendent had a fine row on his hands.

Temperature correct but humidity low

A check-up showed the frames in good order and running at the proper speeds. The weight and quality of the intermediate roving delivered were O.K. The temperature in the room was right, but the humidity was very low.

Upon inspection the humidifier heads were found to be clean and in good condition, but the control device had been broken. Consequently, the humidity had dropped very low on account of the heat generated by the frames and was the cause of the trouble. Repairs were immediately made and in two hours production was running along as usual. It was later learned that the control instrument had been broken accidentally.

Correct humidity benefits everyone

With this experience in mind, the mill superintendent made a very careful study of humidity conditions throughout his mill. By raising humidities, and putting in a few more automatic controls, he was able to stretch out his jobs still more in the roving and other departments as well, to everyone's benefit.

The help in that mill now realize that their pay is directly influenced by the right humidity and temperature conditions. This accident turned out to be a bonanza. It prompted a thorough study of mill humidity the results of which gave greater production under better working conditions.

If the trouble has to do with the humidity conditions in the roving, the yarn, the weaving, the finished goods or the goods after shipment, our engineering staff can show you how to eliminate the trouble and have a sweet-running mill ever after. Write for your copy of "Air Plane Tours through many Mills," without obligation.

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cork, and had some trouble with hard ends. Then the manufacturers supplied several different densities of cork, and they adopted one suitable to their requirements and have since applied the cork on all three top rolls. These are used on an osnaburg yarn and, he said, where they formerly changed rolls on an average of two weeks, the cork rolls run for eighteen months and are then re-buffed. He said he had experienced no difficulty with the flaking reported by Mr. Platt. Mr. McCorkle further stated that the cork manufacturers apply the coverings, and since changing from a steel mandrel to cast-iron, they had had no trouble at all.

Construction of Spinning Bands.

Mr. Towers next asked for experiences as to what makes the best and most lasting spinning band. He himself reported using 2.50-hank roving with 6 turns of twist per inch, 8 strands or 16 ply. Mr. Federline of Lanett uses 2.50-hank roving, 5.25 turns per inch, 6 strands or 12 ply. J. W. Hames uses 2.50-hank, 4.50 turns, 6 strands or 12 ply. A. E. Massey reported 4.25-hank, 8 turns, 9 strands or 18 ply, and Mr. Rogers uses 3.10-hank 7 turns, 8 strands or 16 ply.

Mr. Hames and Mr. Massey both stated they had used bees-wax in preparing the bands, simply waxing the bands. The chairman suggested that those interested might try dissolving bees-wax in gasoline, to the consistency of a thick soup, soaking the bands in this for about a half-hour, and allowing them to dry overnight.

Large-Package Spinning.

The next question asked for experiences with 3-inch ring, 8 or 8½-inch traverse spinning. No one present had experience on this large a ring. Mr. Edwards said he had seen some running, and the thing that impressed him was the amount of floor space occupied; it being pointed out that this large a ring would probably require a 5-inch gauge frame.

The chairman called upon J. R. Federline, Jr., overseer of spinning, Lanett Mill, to give his views as to the objections involved in so large a package. Mr. Federline said that one thing would be the angle of the pull of the yarn against the bobbin, and the distance from the bobbin barrel to the ring. Another was the amount of floor space required. "We are now preparing to replace 128 frames of 2-inch rings," he said, "with 2¼-inch rings, and we are able to get only 96 of these frames in the same room."

"Will you get as much poundage?" asked the chairman.

"No, sir," replied Mr. Federline, and the chairman pointed out that a 3-inch ring would give still less poundage, probably.

Mr. Federline continued, referring to the traveler speed on the larger ring. He said he had been experimenting with a variable speed drive on a frame, and at points he had found the traveler speed in feet per minute so great that it burned the travelers. He said he considered about 5,200 feet per minute normal on his 12s, 15s and 17s yarn.

"Bear in mind," said the chairman, "that with a 3-inch ring running at the same front roll speed, the traveler speed in feet per minute would be probably 50 per cent greater than on a 2¼-inch ring; and there is a maximum speed you can run practically."

Mr. Lanier, overseer of spinning at Shawmut Mill, told here of some experiments he had made on one rail of 3-inch rings in the same frame with some 2⅛-inch rings on 7s and 8s, declaring that in front roll speed, ends down, traveler consumption, etc., the larger ring showed up favorably.

Different Diameter Yarn of Same Number.

The chairman next asked for opinions and experiences as to what will cause yarns of the same number to be of different diameter. Mr. Oliver stated that in his experience, the size of the trumpets on the cards would affect it, stating that he was once at a mill which had installed some second-hand cards, and this trouble began to show up in the ply yarn; that after putting on smaller trumpets the trouble was corrected. Another man pointed out that the twist factor would have an influence.

O. W. Smith said that a higher spindle speed would tend to compress the fibers in the yarn more. A. E. Massey declared that the character of the cotton has a lot to do with it; that a hard-bodied cotton will make a larger diameter yarn of the same number than will a Delta cotton with a finer fiber in it.

When called upon, Mr. Heymer said he believed the preparation of the stock in the card room has a great deal to do with it, in addition to the cotton, as mentioned by Mr. Massey. Mr. Heymer said if a man wishes to secure a fuller, bloomier yarn, he should be able to achieve it by making the drafts a little lighter, and not condensing the fibers so much on the carding and drawing, and cutting the draft on the spinning. Mr. Towers suggested that the cot cloth on the rolls might have something to do with it. Mr. Towers further suggested that one-process drawing might make the yarn fuller.

G. S. Jones asked whether the use of the oil spray might have an effect on the diameter of the yarn. Mr. Heymer said, "I believe it would condense the yarn by laying the fibers closer together," and Mr. Towers agreed with him.

Mr. Jones then asked if the oil sprayed on the cotton would make the roving harder to draw in the spinning. Mr. Heymer said he had found it easier, because of the oiling or lubricating effect of the oil on the fibers.

Individual Versus Group Drive.

The next question asked, "What experience and what conclusions have you come to in regard to individual motor drive and four-frame group drive on spinning and roving frames?" The secretary read first the reply of an absent member, as follows:

"I have not experimented with individual drives on roving frames, and have never had the usual four-frame motor drives on spinning frames. I have one motor driving eight spinning frames through counter shafts and leather belts. I also have individual drive on several spinning frames. The individual drives are connected from the motor to the cylinder through a V-belt drive.

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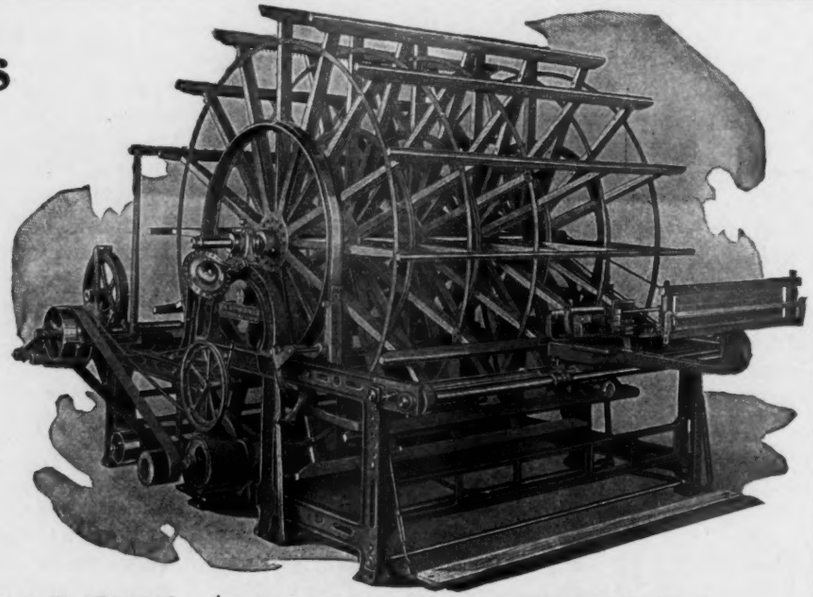

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Mr. Freeman, of Chicopee Mfg. Corp., stated they have 42 speeders driven individually, with chain connection from the motor, and have run into no difficulty. He stated that his drives have a slow speed time clutch to eliminate jerks in starting. O. W. Smith said he does not have this, that he prefers the V-belt drive. "Our experience on the chain drive is most satisfactory," said Mr. Elliott. "I cannot see where you get away from belt slippage with a group drive. The chain drive is just as positive as a gear. We have had no trouble with ours since we understood the lubrication of them."

There was a brief discussion here by Mr. Towers, Mr. Elliott and Mr. Massey, in which it was explained that there would be a lower power factor and a lower starting torque on a group drive as compared with individual drive for the same requirements.

Ray Butler, technical superintendent, Martha Mill, told of experiments with a small V-belt drive for the doffer comb, etc., on cards, which he said would probably be available shortly. He added that it is not necessary to change the size of the sheaves in applying this to the card.

J. R. Federline, Jr., said that shortly they would equip a 240-spindle, 3½-gauge, 8-inch traverse frame, to make 10s to 17s, with a 10-hp. motor that will have disc connections, between the motor and the cylinder shaft. There will be a large disc on the cylinder shaft and four change discs on the motor. Mr. Federline stated that, simply by moving the motor, without the use of any tools, the speed may be changed in ten seconds, the weight of the motor holding the friction discs in contact. The discs are made of micarta, a composition made of duck impregnated with synthetic rosin.

The last question called for a discussion of the running in the carding and spinning of raw stock dyed cotton up to 30s yarn. There was no discussion on this, except that Mr. McDowell read end breakage comparisons between white work and black work, which showed the breakage to be much higher on the colored stock. He pointed out that he had selected black, his worst running color, for the comparison. His figures showed that as the work came through the various processes the variation between the two decreased, until, when he got it to the speeders, there was very little difference. He said that they had been able to improve the running of their colored work by improving the preparation of the cotton (which is cleaned before dyeing) and the dyeing processes themselves.

G. S. Jones, of Sibley, who said his colored work is

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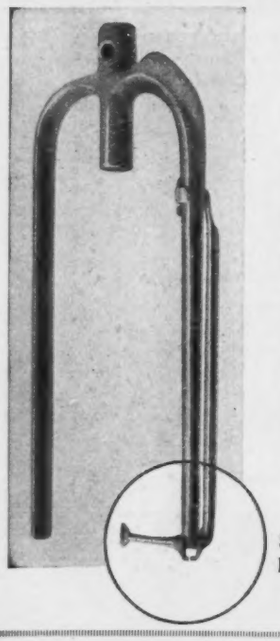

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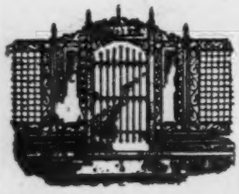

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not pre-cleaned before dyeing, said that formerly he had run white work through the bale breaker and vertical opener and other cleaning, letting the colored work come in at the breaker picker; and that since starting the practice of running his colored work also through the same cleaning processes used on the white stock, his work had greatly improved.

This concluded the discussion, and the meeting was adjourned. An extra session was held for the purpose of discussing the formation of a division to discuss mechanical problems, and to consist of the mill master mechanics and engineers. It was decided to launch such a division, and the first discussion meeting will be held at the morning session of the association's next meeting in September.

Report of Montgomery Meeting

(*Continued from page* 624.)

no more difficulty with hard ends on the cork rolls than he did or does with the leather covering.

G. W. Lehman said they tried out twelve ends on cork rolls on fly frames, and that they ran for four years without giving any trouble, but when re-buffed after that time, and put back in, he said they began to crumble and did not have the former elasticity.

"Four years is a terrifically long time for a roll to run," commented Mr. Ryckman.

J. T. Phillips reported an experience with cork rolls about six or seven years ago which was unsatisfactory, adding, however, that, as was the case with the morning discussion on oil spraying, he understood there had been improvements made in the cork since.

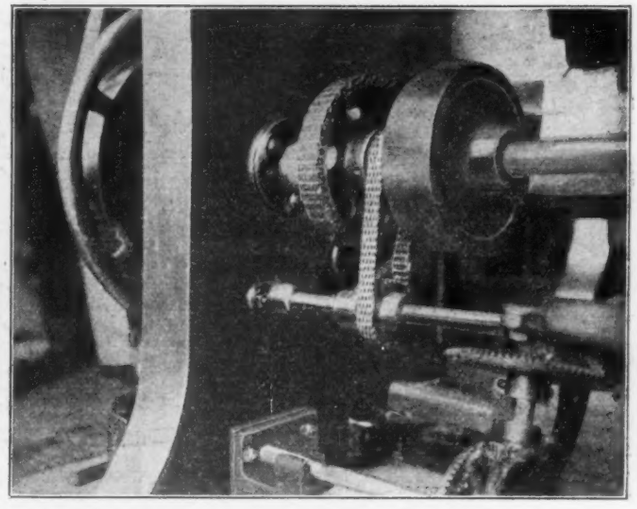
At Lanett, J. A. Bone said, they have 22 speeders, 4 intermediates, and 11 slubbers equipped; and one frame that has been running 4½ years on the cork rolls. He said he has not even buffed the rolls on this frame, that there is not a crease in these rolls. "We have made lots of tests," he said, "and I have put new leather rolls in alongside of them, and we have found that we do not get any material difference. So far as hard ends are concerned, I do not find any difference. We are getting good results. There is no difference in the running of the work or the breaking strength."

Mr. Lanier of Shawmut said he has a half a side, front and back, equipped with cork rollers, but that the front ones do not last. He said the back rolls have been running for seven years and are just as smooth as they ever were.

Mr. Ryckman said he believed the matter depended upon the comparative replacement cost. Mr. Bone said that on calf-skin rolls, back and middle, he found a life of about a year; that the leather roll will crease quicker, whereas the cork is smooth; "you can hardly tell where the roving traverses on the roll,"he said.

Using the Roving Bobbin Cleaning Machine.

Next there developed a very lively discussion concerning the use of the roving bobbin cleaning machine. Mr. Hampton was the first to report, stating that, "I have a bobbin cleaning machine and get very good results." Responding to a question from Mr. Ryckman, he said he has 28,000 spinning spindles, and one bobbin machine keeps up; that he has four different sizes



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of roving bobbins and the machine handles them all. He added that he had made time studies of spinners cleaning the roving bobbins, and had found that whereas it requires six to eight seconds by this method, it can be done much cheaper with the machine.

"How does it affect the waste?" asked Mr. Ryckman.

"You have to watch that," replied Mr. Hampton. "You must not allow the spinners to take out the bobbins too soon. Our spinners run 16 sides and we have cleaners for 32 sides. By fair treatment and by being positive you can control that feature." He said he had no record of the waste before and after using the machine, as the roving and scavenger waste is put into the same box. He replied to another question from Mr. Ryckman as to whether the machine scratched the bobbins, by saying that he scratched some of them.

Mr. Federline, of Lanett, said they have four machines, 21,000 spindles to the machine, and that their experience is very satisfactory. He said that the machine scratched some of the bobbins, and his overseer of carding said that while they have had such things to happen, it is very seldom. He said if the machine is properly looked after, and the proper size of bobbins put in, there will be little trouble along this line.

V. W. Lovill, superintendent, Merrimack Mfg. Co., Huntsville, said he has two machines for the equivalent of 190,000 spindles, and gets good work. He said that when first starting, the machine scratched some old bobbins, but did not affect new ones. Mr. Bone said that the action of the card fillet in the bobbin machine is much less severe, on the fibers than is the cylinder in the roving waste machine, into which cut roving is put.

No one present, among those not using the machine method, said they permitted cutting off; but all have a rule to twist off. Mr. Ryckman was the only one present who had installed a machine and found it unsatisfactory.

There was a brief discussion as to methods of preventing lint from collecting on beams and creels on high speed warpers. Mr. Federline reported the application of a traveling blowing cleaner to his machines. Another question asked for the proper gauge to use in setting spooler guides for 13s, 22s and 30s warp. Among the recommendations for 13s were 17/1000, 16/1000, 16/1000; and for 30s, 11/1000 and 20/1000.

Several of those present who run high speed warpers discussed the next question, which asked if the machine efficiency of high speed warpers as compared with the old type is increased or decreased. All reporting tests stated that while of course the production of the high speed machine is much greater, the actual machine efficiency is somewhat lower.

The last question discussed was, "What has been your experience with ball or roller bearings on spinning frames?" Only one man, Mr. Mims, reported experience, stating that he has ball bearings applied to two frames of 252 spindles, on the cylinder; that he believes this produces a saving in lubricant and power, as well as taking some strain off of the cylinder. This concluded the discussion.

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The booklets or catalogs briefly mentioned below may be obtained by any reader of COTTON who will write to the Company issuing them or to COTTON, Grant Bldg., Atlanta, Ga.

1. Cotton Picking, Carding and Spinning—Covered by three different catalogs. Picking catalog covers Opening and Picking Machinery; Card Room catalog covers Cards, Combers and Roving Frames; Yarn Machinery catalog covers Spinning, Twisting, Spooling, Quilling and Reeling. By Whitin Machine Works, Whitinsville, Mass.

2. Pepperell Equipment—10 page illustrated booklet, showing High Speed Warping from cones as adopted by Pepperell Manufacturing Company after thorough experiments. Installation and product photographs. Issued by Universal Winding Company, Boston, Mass.

4. New Methods of Opening Cotton, also "Brown" Automatic Mixing and Cleaning Distributor—Illustrated booklets showing advantages of Centrif-Air Cotton Cleaning System. Pamphlets also on better picking and carding and pneumatic trunk line cleaner. Issued by Centrif-Air Machine Company, Atlanta, Ga.

5. The Bahnson Master Control—Bulletin No. 301, 5 pages. Illustrated. Automatic device designed to control humidifying equipment so as to maintain a constant relative humidity. By The Bahnson Company, Winston-Salem, N. C.

6. "Cotton" Weather Vein, 32 pages; "Rayon" Weather Vein, 40 pages; house publication, illustrated. Bulletin 58, 80 pages, illustrated; **Manufactured Weather**—the automatic control of air conditions within buildings. Carrier Engineering Corporation, Newark, N. J.

7. Circulating Spindle Winder—Pamphlet on winding all kinds textile threads showing new principle, by Abbott Machine Company, Wilton, N. H.

10. Leathers, Textile—Booklet No. 101, 48 pages. Illustrated. Showing BONDARON Check Straps—Lug Straps—Harness Straps—Pickers—Belting, both round and flat, etc. Horsepower tables and other interesting information. By Charles Bond Company, 617 Arch Street, Philadelphia, Pa.

11. Whitinsville Rings—16 page illustrated booklet. Describing ring manufacture, measurements, types, uses. How to determine flange sizes. By Whitinsville, Spinning Ring Co., Whitinsville, Mass.

12. The Pick Method of Weaver Wage Payment—Booklet, 20 pages. A practical manual giving full information and tables on this method of payment. By the Durant Manufacturing Company, Milwaukee, Wis.

13-A. Equipping Modern Textile Plants—Booklet, 35 pages, illustrated. Describes value of Monel Metal equipment in textile plants and presents reports from mill owners and operators on actual experiences; equipment, descriptions, etc. International Nickel Company, Inc., 67 Wall Street, New York, N. Y.

13-B. Dyed in the Truth—Vols. I and II. Reprints of advertisements of special interest to textile dyers. Describes equipment and uses of Monel Metal in meeting metal problems of the industry. The International Nickel Company, Inc., 67 Wall Street, New York, N. Y.

14. Emerson Conditioning Ovens—2 booklets on conditioning of textiles, or determination of the amount of moisture in textiles. Issued by Emerson Apparatus Co., Melrose Highlands, Mass.

15. Saving Labor, Material and Power in the Textile Industry—Bulletin No. 133. Illustrated. Controlling, Recording and Indicating Instruments in textile mills. Temperature, Pressure, Humidity, equipment layouts and descriptive applications. The Foxboro Company, Foxboro, Mass.

16. Tycos Instruments for the Textile Industry—Catalog, 84 pages, illustrated. Shows instruments for every application in the textile industry, specifications, prices, diagrams and installation data by Taylor Instrument Companies, Rochester, N. Y.

17. The Powers System of Thermostatic Control—"Slasher Room is Bottle-Neck of Textile Mill." 18 page illustrated booklet showing importance of proper treatment of cloth in slasher room and advantages of Thermostat over hand control. Also room temperature control illustrations. Issued by Powers Regulator Co., 2739 Greenview Ave., Chicago, Ill.

19. Quaker City Chemical Co.—48-page booklet containing useful information, tables, formulae, on dyeing, bleaching and finishing all textiles. Issued by above company, 2736 North Broad St., Philadelphia, Pa.

20. Bleaching, Dyeing, Finishing and Printing Textile Goods—70-page booklet containing interesting information on faults and methods in finishing goods, useful tables and definitions. By Bosson & Lane, Atlantic, Mass.

21. Warp Sizing and Composition of Cotton—Folder containing reprints of articles carried by textile publications of interest to progressive mill superintendents. By Seydel-Wooley Co., 748 Rice St., Atlanta, Ga.

22. Tragasol and Its Uses—Booklet, 60 pages, constituents and properties—Dissolving and preparation—sizing and dressing of yarns—cloth finishing—miscellaneous. By John P. Marston Co., 247 Atlantic Ave., Boston, Mass.

23. Practice of Rayon Sizing in American Mills, Raygomm, Lakoe Gum—Three booklets on products for sizing and finishing rayon and other textiles, presented by Stein Hall & Co., Inc., 285 Madison Ave., New York, N. Y.

27. The Seven Factors of Belting Economy—Booklet, 112 pages, illustrated, containing authoritative information on the economical layout, care and operation of belt drives. Chas. A. Schieren Company, 33 Ferry Street, New York, N. Y.

30. Lubrication of Textile Machinery—32 pages, illustrated. Data covering the economical lubrication of all textile machines. New York and New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

31. Aluminum Paint—The Coat of Metal Protection—Booklet, 46 pages. Illustrated. The protecting and light reflecting qualities of Aluminum paint; its advantages to textile industry; where it is used; specifications. By Aluminum Company of America, 2400 Oliver Bldg., Pittsburgh, Pa.

32. Flooring, Open Steel, Area Gratings and Steps—Folder, 6 pages. Illustrated. For platforms, walks and stairs; non-slipping. By Kerlow Steel Flooring Company, Jersey City, N. J.

33. Cast Iron Columns—18-page booklet on use of cast iron columns in mill construction. By National Cast Iron Pipe Co., Birmingham, Ala.

35. Seating Equipment—Automatic, adjustable, ten inch height adjustment, all steel, mill and factory seating specialty, illustrated booklet, ten pages. Vitek Manufacturing Company, Omaha, Nebr.

36. Hosiery Inspection, Seamless and Full Fashioned—Illustrated folder. Also describes new Leg Examining Machine for full fashioned ladies' stockings. Edward R. Ammon, Reading, Pa.

39. Trend of Sales of Silk, Rayon and Cotton in the Piece Goods Departments; twenty-four-page booklet; prepared by DuPont Rayon Company in conjunction with National Retail Dry Goods Association. Copy furnished without charge by either of above. DuPont Rayon Co., 2 Park Ave., New York, N. Y

40. The New Competition in Color—20-page illustrated booklet. Discusses future trends in business and their significance, present trend toward fast colors in textile industry and opportunity this trend offers for increased profits if properly utilized. By Franklin Process Co., Providence, R. I.

41-A. Arizona Pima Cotton — Origin; planting, irrigation, picking, merchandising and distribution methods. By E. A. Shaw & Co., Inc., Boston, Mass.

41-B. Sudan Cotton—Growing districts; irrigation, merchandising and distribution methods. By E. A. Shaw & Co., Inc., Boston, Mass.

42. Factoring—Booklet, 11 pages. Summary of Factoring Service provided for Manufacturers of Textiles. By Textile Banking Company, 50 Union Square, New York, N. Y.

44. Points of Interest in and Around Atlanta—36 pages. Illustrated, describing places of scenic and historic interest in Atlanta in particular, and the Southeast in general. Atlanta Biltmore Hotel, West Peachtree, Fifth, Sixth & Cypress Sts., Atlanta, Ga.

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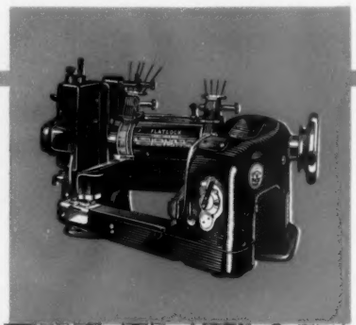


THE FLATLOCK

STRAIGHTENING Needles, Welt Hooks, Narrowing *and* Transfer Points

By C. H. Baxter

THESE INSTRUCTIONS on straightening needles, welt hooks, narrowing points and transfer points are published in the thought that the executive reader will pass them along to his superintendent; and that the superintendent will read them and pass them along to his knitters for study. They represent the experience and practice of Mr. Baxter at his plant, and we therefore feel that they will be received with interest. Mr. Baxter will gladly answer any question on full-fashioned work submitted by a reader.—THE EDITOR.

MANY PEOPLE who are not familiar with the full-fashioned hosiery industry, often ask the question, why is a full-fashioned hosiery knitter paid exceptionally high wages compared with other so-called trades and what skill is required to warrant the paying of such high wages?

To this question there is only one answer and that is that the skill of a full-fashioned hosiery knitter is in the pliering or straightening of the needles, narrowing points, welt hooks and transfer points of a knitting machine.

In order to produce good hosiery, a knitter must be an expert on the straightening of all these parts and as the knitting of full-fashioned hosiery is paid for on a piece-work basis, it is the operator who is skillful in these operations that earns the high wages. The peculiar thing about straightening the parts mentioned is that there really is no standard method used in doing this work and every knitter has his own individual way of holding the pliers, holding the needle for the purpose of straightening same and the method of straightening needles in the machine. Some of the methods used are bad and the result is that a knitter who has acquired a bad method is usually a poor knitter and a poor producer.

In this article it is not my intention to set a standard method or to try to tell others that the method I am describing is entirely correct, but I am merely going to give my ideas on what I believe is a proper and sure way to straighten needles, welt hooks, etc.

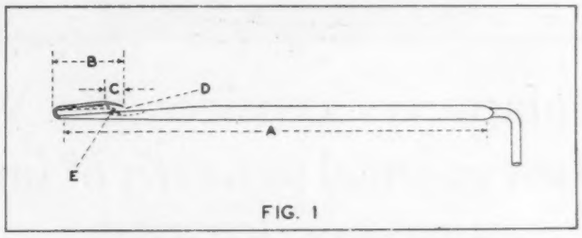


FIG. 1

NEEDLE PARTS TO BE STRAIGHTENED
A—stem; B—beard; C—hook; D—beard in center of groove; E—opening between tip of beard and groove stem.

Straightening the Needles.

First, let us take the matter of straightening needles, which is the most important work in connection with the successful operation of a knitting machine. In making a full-fashioned knitting machine spring beard needle, there are over one dozen operations that this needle must go through and during the course of each operation, the manufacturer of needles endeavors to keep them as straight as possible so as to make it easier for the knitter to straighten them when he receives them.

However, it is utterly impossible for any manu-

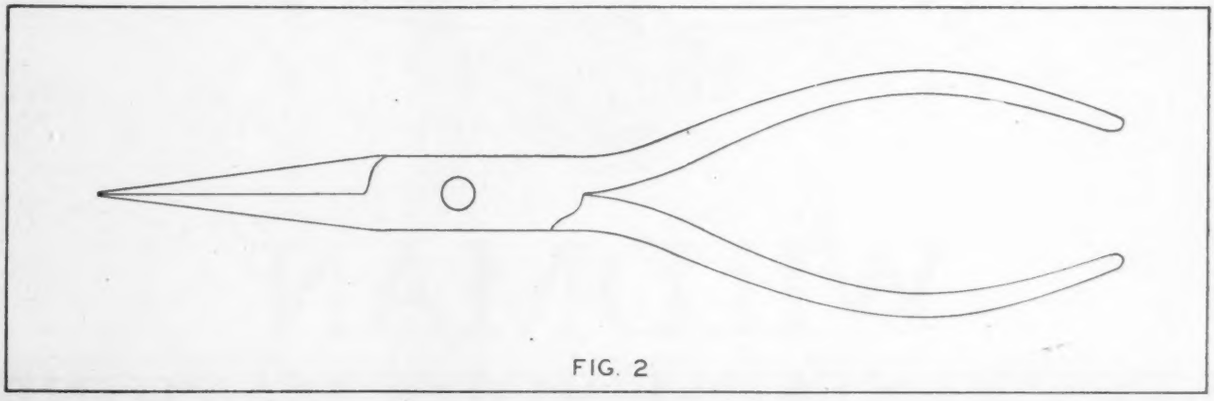
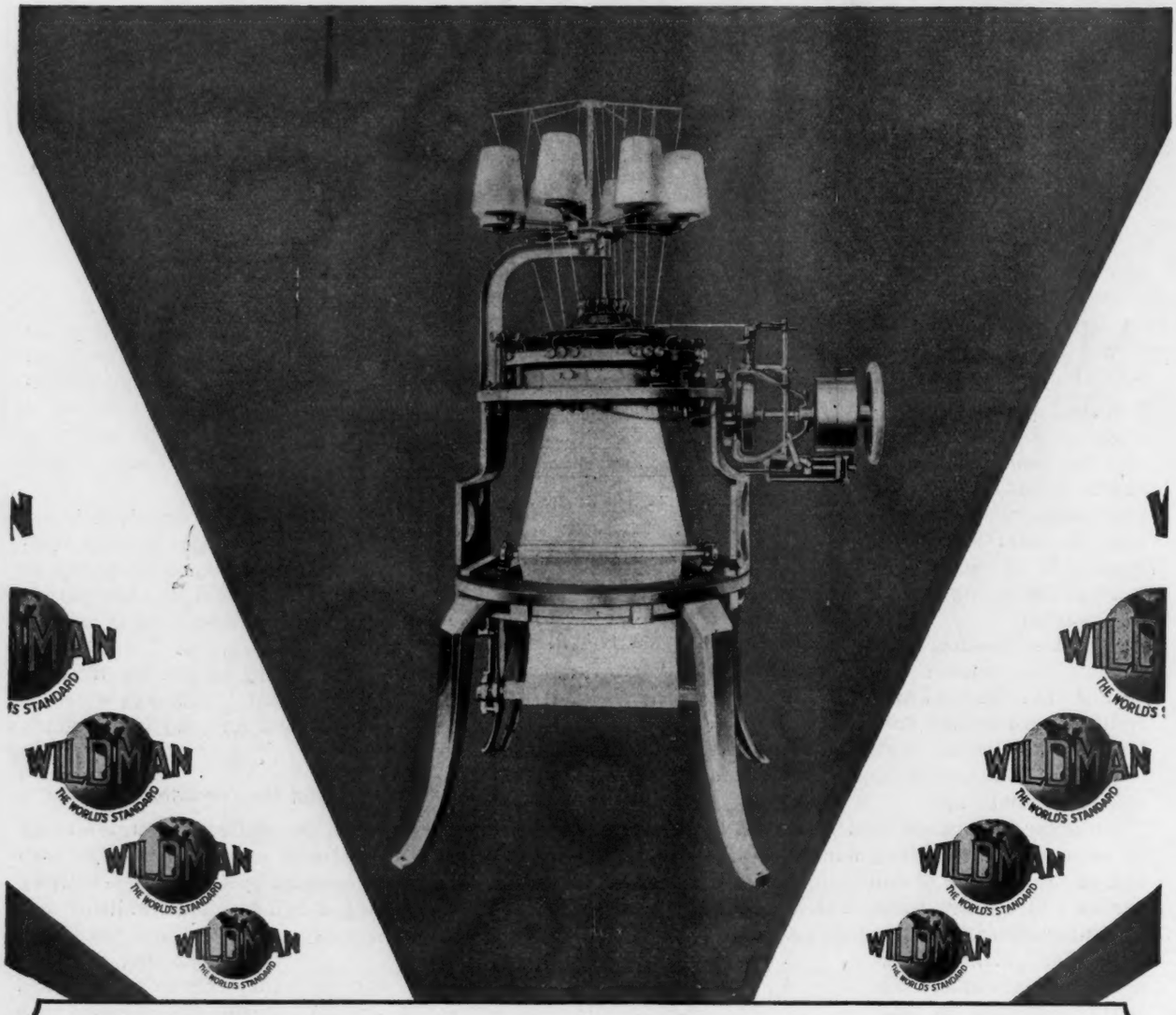


FIG. 2

NEEDLE PLIERS.



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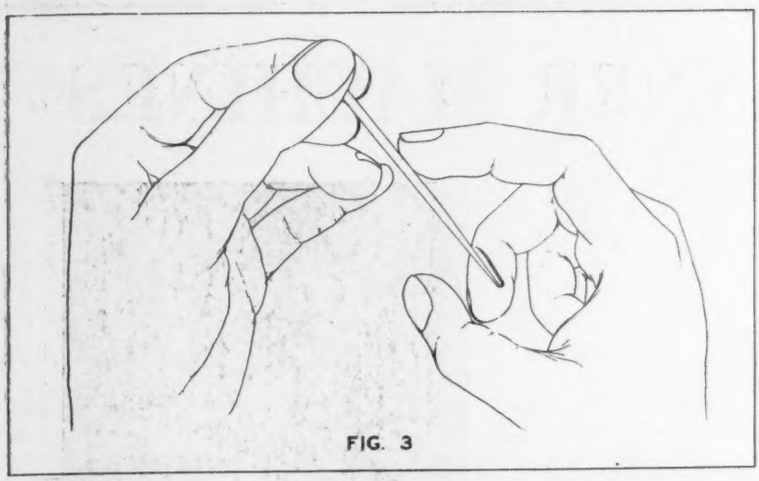

FIG. 3

FINGER METHOD OF STRAIGHTENING NEEDLES.

The needle is placed between the thumb and forefinger of the left hand and the straightening of the stem is done with the forefinger of the right hand by rubbing the stem.

facturer of knitting needles to ship needles to knitters so straight that the knitter merely puts them in the machine without any further straightening. It is, therefore, necessary for the knitter to straighten out the needle before it is placed in the machine, so that the needle will make a proper stitch.

In the straightening of a needle, the following parts of a needle must be straightened. (See Fig 1.) First, the so-called stem of the needle must be straightened. Second, the needle beard must be straightened, which includes the opening of the beard, the hook on the beard, and having the beard in the center of the groove.

In the straightening of the stem of the needle, I use two methods and either one used by a skilled knitter, in my opinion, is proper. The first method is what is called finger straightening. (See Fig. 3.) In using this method, I first place the butt end of the needle between the thumb and fore-finger of my left hand and raise my hand so that the eye can look across the entire length of the needle to see at what place or places the needle is bent. I then place the forefinger of my right hand on the stem where it is bent and by rubbing the stem and using pressure on the place where the stem is bent, I spring the stem in such a way that it will be straight. Needles are made from what is called spring steel and by learning how to snap the stem of the needle through pres-

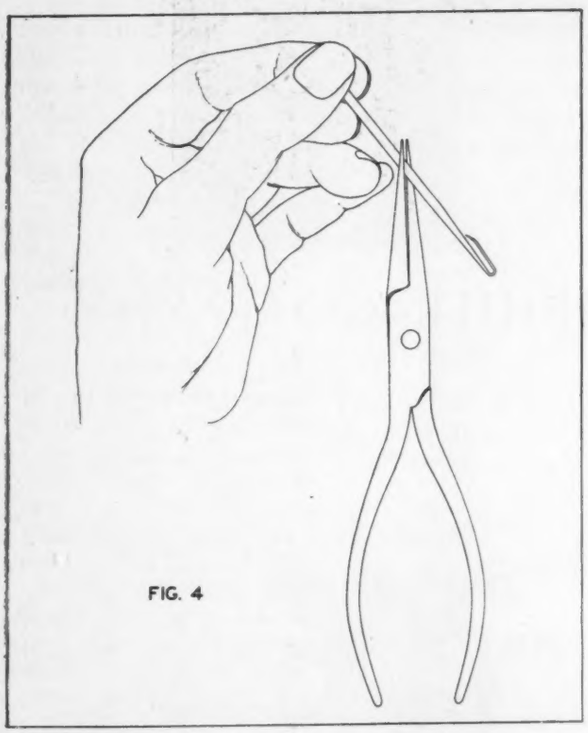

FIG. 4

PLIER METHOD OF STRAIGHTENING NEEDLES.

The needle is placed between the thumb and forefinger of the left hand, with the pliers in the right hand. Keep pliers open a trifle and rub needle with pliers where stem is bent.

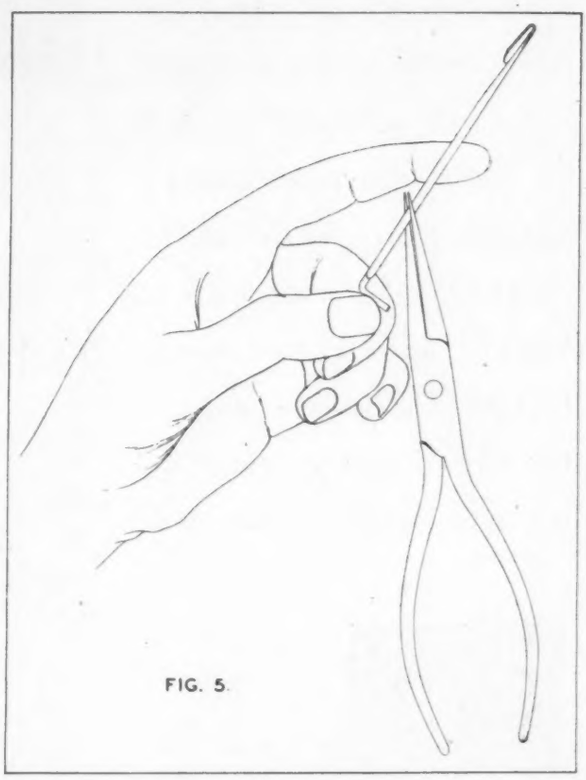

FIG. 5

TO SEE IF BEARD IS IN CENTER OF GROOVE.

The needle is grasped at center of stem with pliers. Butt end of needle is held by thumb, and forefinger is placed under needle stem near beard. Thumb moves needle up or down for proper focus on beard at all angles.

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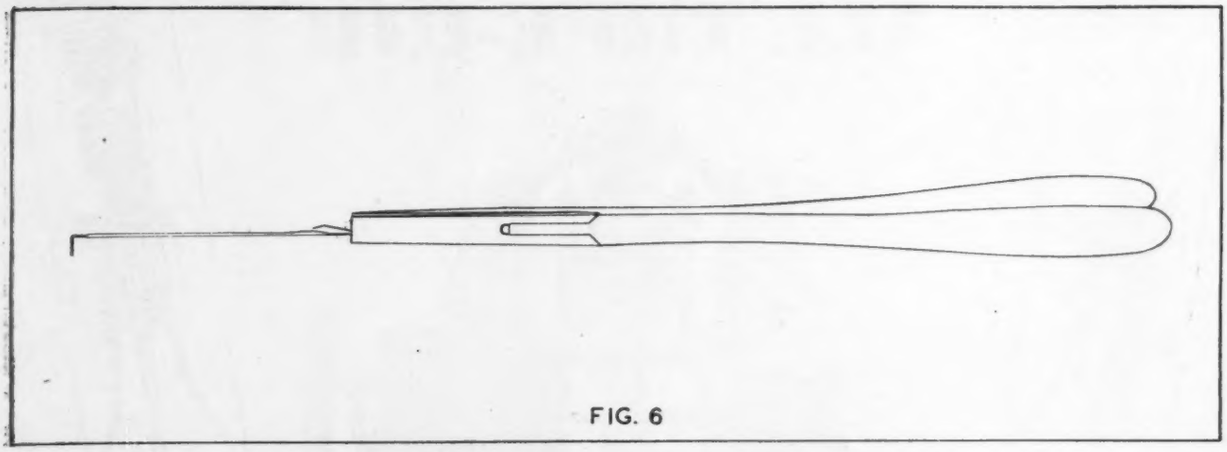

FIG. 6

METHOD OF PLACING BEARD IN CENTER OF GROOVE

Place needle between thumb and forefinger of left hand at the center of the stem. To place needle beard into the center of the groove, grasp the extreme tip of needle with pilers and twist beard until it is in the center.

sure and rubbing, it is an easy matter to spring the needle in shape so that the stem is straight.

The other method, which I use more frequently than the finger method, is the straightening of needles with the pliers. (See Fig. 4.) It has been my experience that by using the pliers (See Fig. 2) for straightening the stem, one can do a better straightening job and the plier method will take out a small bend in the needle better than when using the finger method. However, here again a knitter must be skilled in the matter of knowing how to use pliers, otherwise damage can be done to the stem of the needle.

In the needle plier method, I hold the needle between the thumb and forefinger of the left hand in the same manner as when finger straightening. In the right hand, I hold my pliers so that my little finger is in the inside of the grip of the pliers, and the little finger is used for opening the pliers to any distance necessary.

The other three fingers are used for closing the pliers. My thumb I place at the joint of the pliers and the purpose of doing this is that by a slight pressure of the thumb, it acts as a brake in stopping the pliers from closing too tight. Before going further, I might say that if one wants to be an expert needle plierer, he should learn that the lighter one handles a pair of pliers, the better one can do the work. A pair of needle pliers is a delicate tool and a needle is easily damaged if one uses a pair of pliers as if he were trying to pull out nails. A man with what is called a "heavy hand" rarely makes a good needle plierer, whereas one who has a light, quick touch usually is an expert pliering needles.

In straightening the needle with the plier method, the hand holding the needle is again raised so that the eye can look across the entire length of the needle. When you see a bend in the stem, then take the pliers and rub the needle where the bend is and twist the pliers so that pressure of the pliers will take the bend out of the needle. The pliers should never be closed entirely when taking a bend out of a stem but should be left open slightly, so that the plier can rub up and down on the needle stem freely. Always see that the stem is rubbed, so as to avoid the possibility of putting a kink in the needle stem. If kinks are put into the needle, then the needle is unfit for use and therefore, one must watch out that the stem of the needle is straightened out without kinking.

After the needle stem has been straightened, then one must look at the beard of the needle. In this operation, pliers should be used, as I do not believe that any other method can be used for straightening the beard of the needle.

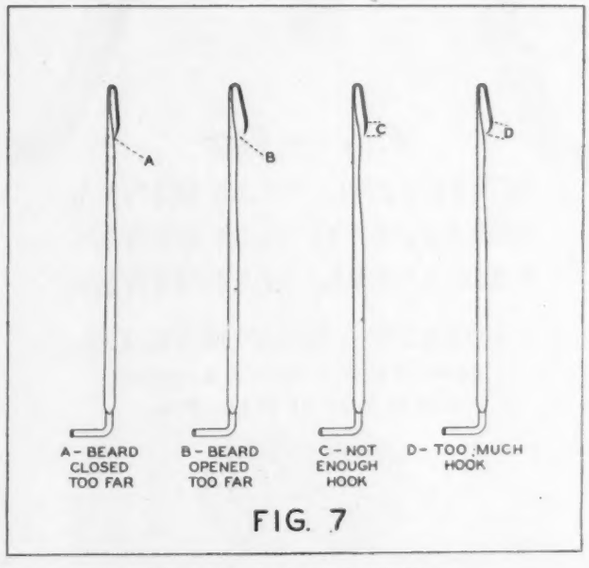

FIG. 7

IMPERFECTLY SET NEEDLES.

Before writing about how needle beards should be straightened, let me say that the beard of a needle is the most important part of the needle that must be straightened properly and most of the needle trouble caused in a knitting machine is due to the beards of the needles not being straight.

First of all, the beard of the needle must posi-

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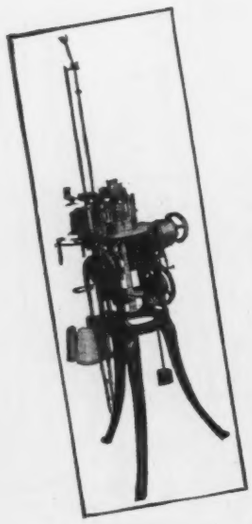

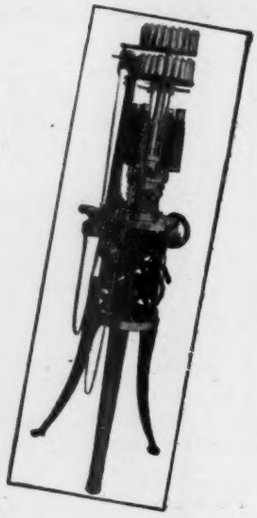

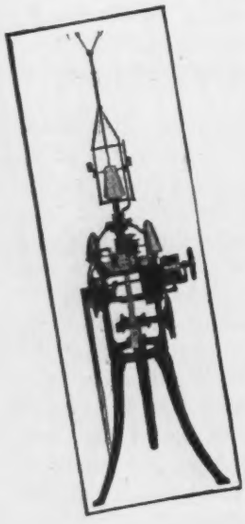

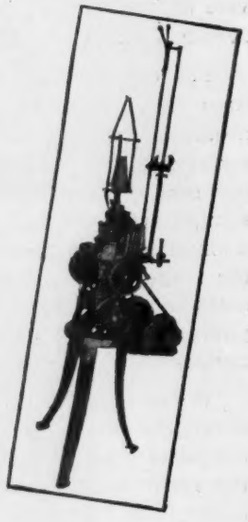

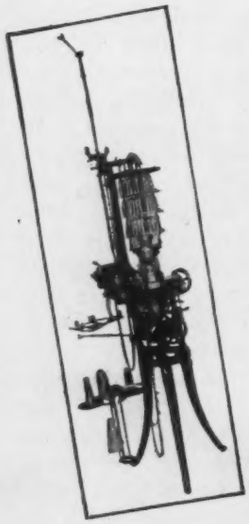

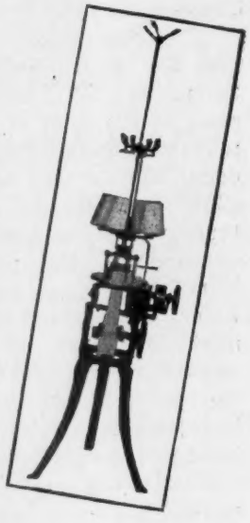

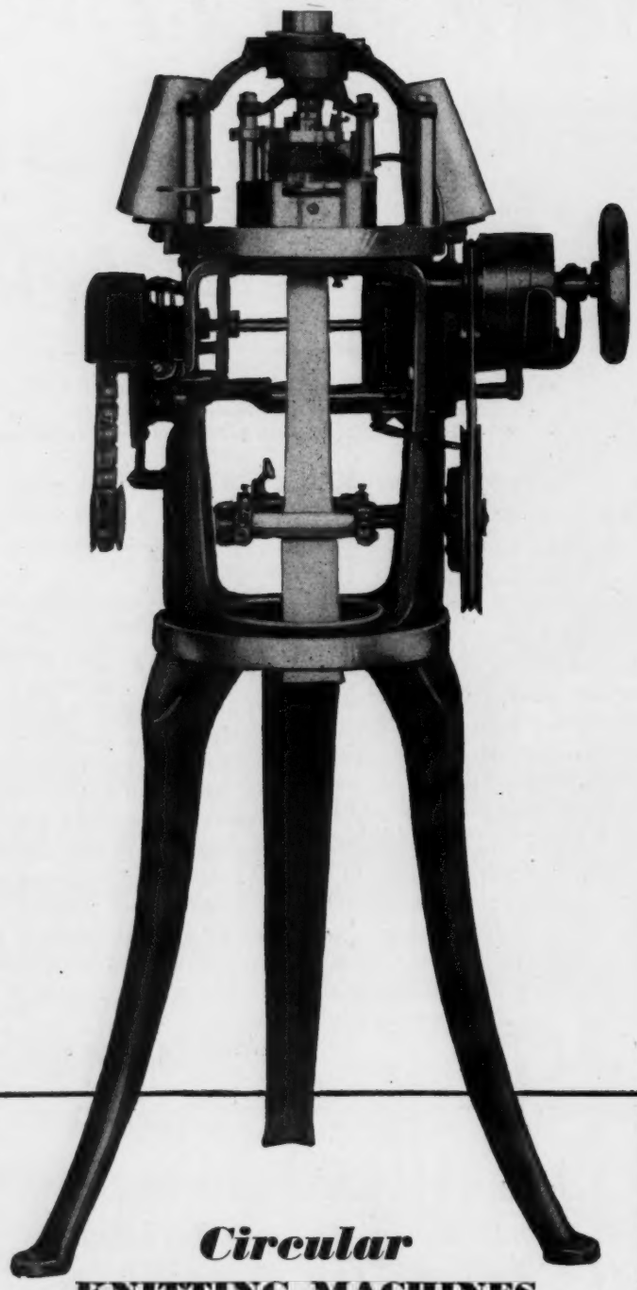

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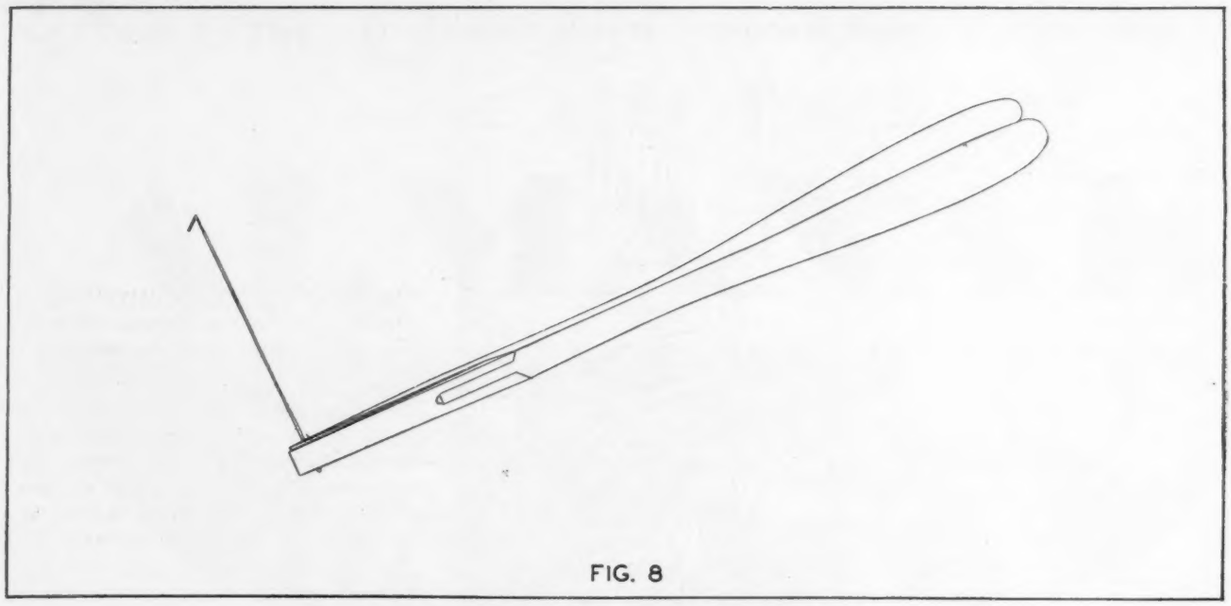


FIG. 8

METHOD OF OPENING BEARD OR MAKING PROPER HOOK.

To open beard, grasp beard with pliers, and raise beard with as light a touch to pliers as possible. Do not bend beard as in Fig. 9-B; otherwise needle will be unfit for use.

tively be in the center of the groove in the stem of the needle. Next the entire length of the beard must be straight with the stem of the needle and not twisted in any way. The opening of the needle beard must be open enough to allow the stitch to pass through. Closed beards cause drop stitches, half stitches and so-called blind drop stitches.

The hook or top of the beard should be bent so that it closes the needle with as little pressure as possible during the presser operation. (See Fig. 7). Too much hook on the beard tip will cause needle breakage or result in the needle eventually closing, causing drop stitches. Not enough hook on the beard tip will cause what are called stitches hooked on the needles or stitches not pressing off properly. The heights of the needles beards should all be uniform so that all stitches can press-off the needle evenly and without trouble and through having uniform heights and openings, better fabric is the result.

In straightening needles, either in the machine or out of the machine, care must be taken never to plier at the groove of the needle. The danger here is that the pressure placed on the plier may close or squeeze the groove of the needle and result in the needle beard not being able to enter into the groove of the needle. "Keep the pliers away from the groove of the needle"—is a good motto for any knitter to learn and use, when straightening needles.

In straightening needles, first grasp the needle with the pliers at about the center of the stem. (See Fig. 5). Place the forefinger of the left hand underneath the needle in the front of the pliers and the thumb of the left hand at the butt of the stem of the needle. Raise the right hand holding plier with needle, so that the eye can see how the needle fits into the groove. By moving the thumb at the butt end of a needle, it can be raised or lowered to secure whatever focus desired, so that all angles of the needle beard can be seen. As soon as one has decided that the needle beard is either too far to the left or right of the groove and wishes to set the beard into the center of the needle, the following method should be used:

Take needle from plier and hold between thumb and forefinger of left hand with the needle beard pointing to one's body. Then take pliers and grasp the head of the stem where the needle beard is formed and then twisting the needle so that the beard can be twisted back into the center of the groove. (See Fig. 6.) It is quite customary for some knitters to grasp the needle beard with their pliers

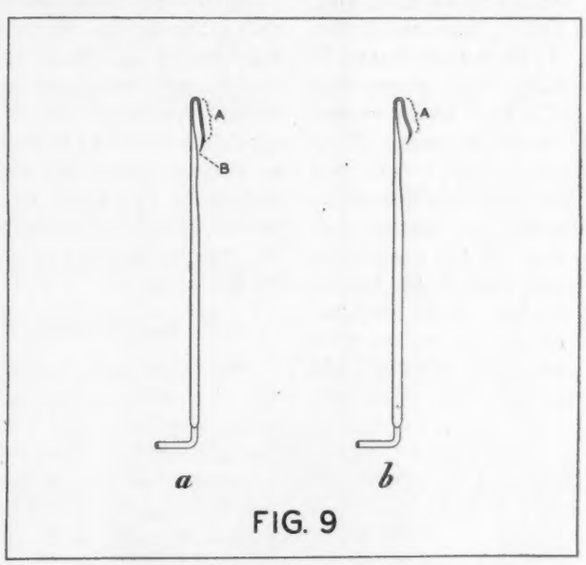
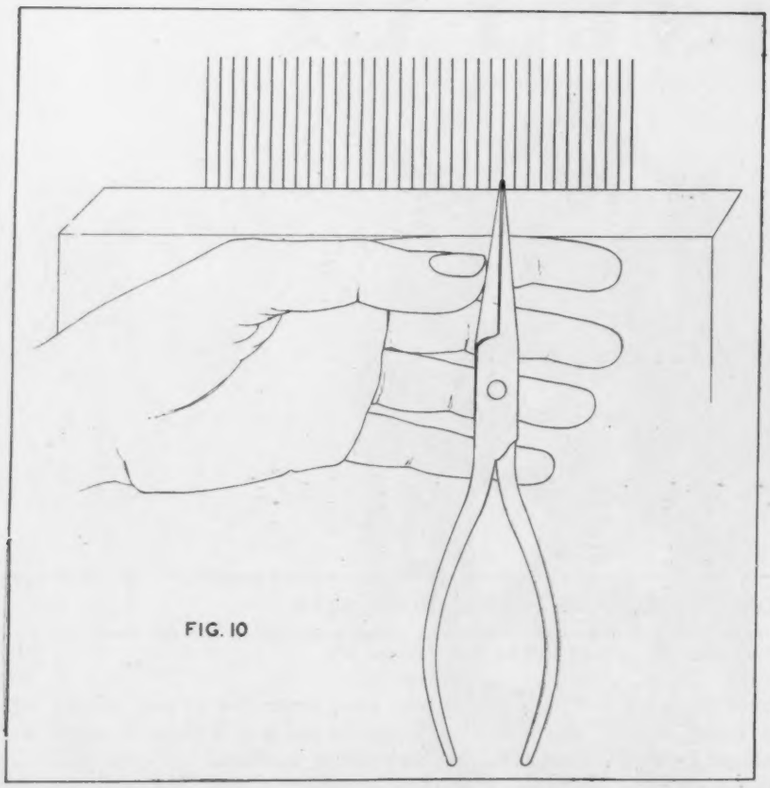


FIG. 9

When opening beard, do not bend from tip of stem to start of hook, as at A in either a or b. Openings at B should all be the same. Do not have one needle open too far or beard too high, and another beard closed too far. A needle bent as at b is unfit for use.



METHOD OF STRAIGHTENING NEEDLES IN A FULL-FASHIONED MACHINE.

The left hand is placed against the lower part of the needle bar and the thumb is extended to allow the pliers to slide backward and forward against the thumb. By this means the pliers are braced and are prevented from turning and twisting or bending the needle out of shape.

at the center of the beard to place the beard into the center of the groove but this method is wrong, as there is a danger of bending the needle beard out of shape and will result in the needle beard being twisted so that it will not fit into the groove of the narrowing point. The needle beard should be straight in line with the stem of the needle so that the needle beard will fit into the groove of the narrowing points when the narrowing operation is made.

After the beard has been straightened, then look at the opening of the needle beard; also see if the hook on the tip is just right. If the needle beard is closed or set tight in the groove, take pliers and grasp the needle beard at a distance about center between top of the needle and tip of the beard. (See Fig. 8-A). Then raise the needle beard until the proper opening has been secured, but care should be taken not to bend the needle beard in the center, otherwise the needle is unfit for use. If the opening is too high, then take the pliers and squeeze the needle beard until the needle beard has the proper opening.

If there is not enough hook on the needle, take pliers and make a larger one. (See Fig. 9.) If there is too much hook on the needle, take pliers and lightly rub the hook until the proper amount of hook is on the needle. Ofter all these operations are finished, a knitter should again examine the needle to see if it is straight in all places and if it is, then it is ready to be placed in the machine.

Removing a Broken Needle.

To remove a broken needle in a needle bar and replace same with a new needle, first one must open up the needle plate by unloosening the needle plate screw and opening the plate just far enough to remove the broken needle. In placing a new needle in the needle bar, the needle should be grasped by the plier at the center of the needle stem and then let the butt end of the needle follow the groove in the needle bar until the butt end of the needle enters into the hole into which the butt end of the needle fits. The needle plate should then be fastened by tightening up the needle plate screw and the needle is now ready to be straightened in the machine.

In the matter of needle straightening in the machine, the knitter must straighten the needle so that they are in line, must take out any bends or spaces in the needle stem and must also see that all so-called bellies are taken out of the needle. He must also straighten needles so that they are perfectly straight or upright in the bar and must see that they are not swung to the right or left. In other words, the needle cannot do perfect work or narrow properly if the needle has been pliered on an angle or is leaning to one side.

Straightening Needles in Machine.

My experience has taught me that if one wishes to be an expert needle straightener as far as straightening needles in the machine is concerned, the first thing to learn is how to brace the pliers so that the pliers do not twist in the hand, while the straightening is being done. The best method of bracing that I know of and a method that I have found to be successful for others is as follows. (See Fig. 10):

Taking for granted that the knitter is right handed, he should first place the pliers in his right hand. The left hand he should place at the bottom or table of the needle bar where the needles enter into the

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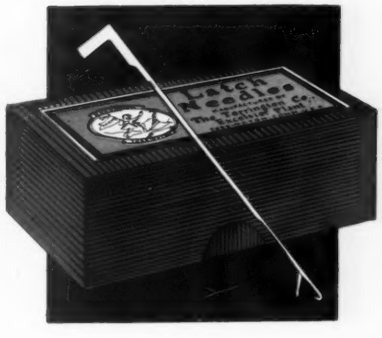

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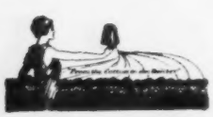

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needle bar and extend the thumb in such a manner so that the pliers will slide along the tip of the thumb. The thumb acts as a brace and results in the pliers entering to the needle that is to be pliered straight and even without danger of twisting the pliers when grasping the needle. The left hand at the bottom of the needle should remain stationary and the hand should only be moved as each needle next to the one just pliered or straightened is to be straightened.

In the pliering of needles in the machine, one should always be sure to grasp the needle below the groove to avoid the danger of closing the groove of the needle. The straightening of the needles in a needle bar is mainly a matter of eyesight, as one must strain the eyes to be sure that the needle is straight in line and spaced correctly. The pliering is merely a matter of bending the needle forward, backward or sideways, until the needle is spaced and straight in line with the other needles in the needle bar.

The straightening of needles in a needle bar is an art that takes time to learn and while in describing the method of straightening of needles, others may think it is a simple thing to do, I can assure anyone that needle straightening at no time is as simple as it looks to be. It is only by constant practice that one becomes an expert in the art of straightening needles.

Straightening the Narrowing Points.

In the straightening of narrowing points, very little needs to be done in straightening the point before placing it into the narrowing finger. The stem between the top of the groove and the butt end of the point should be straightened, but never try to straighten the groove of the point.

There is, however, one very important part of a narrowing point that should be looked at before placing it into a narrowing finger and that is the curved

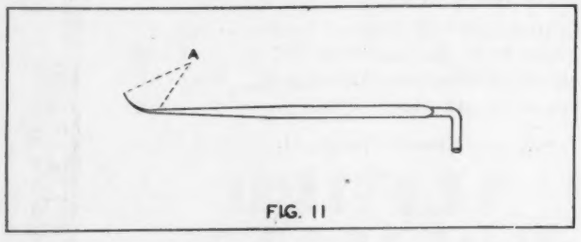


FIG. 11

NARROWING POINT.

A—the curve of the narrowing point that should be rounded a trifle for preventing the stitch from falling off when narrowing.

tip of a narrowing point. (See Fig. 11.) This curve is placed in a narrowing point for the purpose of preventing the stitch from falling off of the narrowing point when the narrowing point has taken the stitch off the needle to place the stitch on the second needle from the needle the stitch was taken from. If the curve on a narrowing point is too straight, then the stitch will fall off, so therefore it is necessary to look at this curve and if it is too straight then take the pliers and make the curve a trifle more round.

In the pliering or straightening of points in a narrowing finger, the same method is used as when straightening needles. The point is grasped by the plier at the tip of the point and never at the groove and pushed forward, backward or sideways until it is in line and spaced properly. I say never at the groove, because in grasping the narrowing point at the groove, there is always the danger of closing the groove of the point and this is one of the things that will cause drop stitches in the narrowings.

Straightening the Welt Hooks.

In the straightening of welt hooks, transfer bar points and transfer stand points, no straightening need to be done before these parts are placed into their respective bars. The straightening of these parts is simply the same method of having them straight in line and spaced properly.

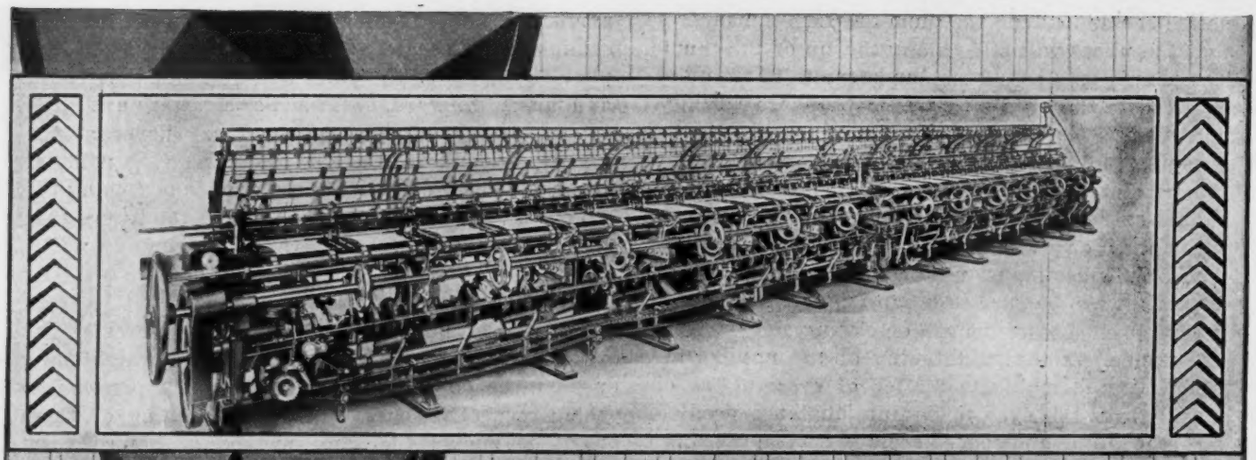
However, again I must caution that never should the hooks or points be grasped at the groove. My reason for this caution is that many times I have seen poor merchandise made, have seen many menders, and the cause for these menders and poor work was because the knitters grasped the needles, narrowing points, welt hooks and transfer points at the groove, thereby closing the groove, and the result was that the needle beard could not enter into the groove of the points.

I have written this article with the idea of providing information for men who are interested, and can say to those interested that the knowledge of straightening properly and doing it correctly at all times is eighty per cent of the art of knitting, and it is the knitter who is an expert needle straightener that is the producer. The knitter who does not neglect the needles and narrowing points will have less break downs, less needle breakage, less menders and less press-offs, than the careless knitter. Every hosiery manufacturer admires the knitter who keeps his needles in proper condition and it is this type of knitter who never needs to seek a new position.

Good Demand for Cotton Bags

Widespread preference for cotton cement bags is indicated in preliminary results of a special survey just undertaken by The Cotton-Textile Institute. More than half the reports so far received from highway engineers and heads of public works departments in cities throughout the country state that cotton bags are specified for all the cement required in their building programs this year. Typical of this preference is the statement from the Department of Public Works and Buildings in Springfield, Ill., that the 4,000,000 barrels of cement which the city will require this year are to be shipped in cotton bags.

Other cities specifying all cement shipments in cotton bags are Detroit, Baltimore, Columbus, Ohio; San Diego, Calif.; Denver, Col.; and Houston, Texas. Officials in Harrisburg, Pa., and Nashville, Tenn., estimate that 95 per cent of their cement is purchased in cotton bags. In St. Paul, Minn., and Salem, Oregon, approximately 90 per cent of cement shipments are made in cotton bags.



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HIGH SPEED - TYPE H.S.L.

WHAT COUNTS?

When you consider the purchase of Full Fashioned Hosiery Machines—what counts?

The number in use?

The life of the machines?

The speed of production?

The quality of fabric produced?

The record of the organization for rendering after-sale service?

Apply any of these questions to Schubert & Salzer type H. S. L. Full Fashioned Hosiery Machines. We will abide by your judgment.

Sold and Serviced in the U. S. A. by

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24 SECTIONS ALL GAUGES 65 COURSES PER MINUTE

FULL FASHIONED HOSIERY MACHINES

A History of Hosiery Inspection

By Edward R. Ammon

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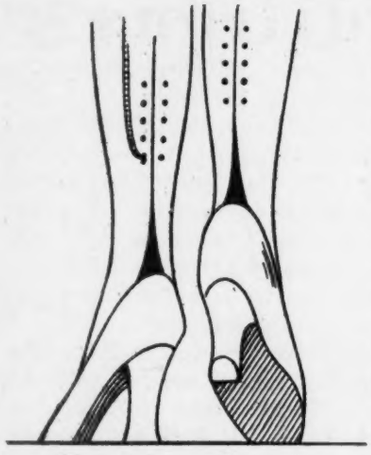
PART SEVEN

THIS is the seventh of a series of articles on "The History of Hosiery Inspection," by Edward R. Ammon. The first article appeared in the August number, the second in the September issue, the third was in November, 1929, the fourth in January, 1930, the fifth in February and the sixth in March, 1930. Subsequent installments will appear in later issues.—The Editor.

GRADUALLY firms manufacturing metal products realized the necessity and demand for an examining device that would be an improvement over the home-made forms, both flat and round, that hosiery manufacturers in their necessity had made of wood. Steel and aluminum forms, both round and flat, that were mounted on roller or ball bearings, commenced to make their appearance. Some were mounted vertically, some horizontally. As they were of polished metal and revolved freely, many manufacturers consigned their home-made equipment to the loft and purchased one or another of the metal forms that were making their appearance.

Due to their being much more smooth the operator drew the stocking on with greater ease and was capable of stretching it more than on the rougher home-made type. The result was further improvement in quality of inspection for those that adopted them. In spite of the best that the inspectors could do, there was a continuous and persistent percentage of defects that were missed no matter what type of form or hand examinations were used. Those manufacturers who in their anxiety tried giving the stockings two separate examinations fared little better than those that only had one inspection. As with the home-made forms, the persistence of missed defects caused careful analysis and deep study on the part of manufacturers which usually led to the following conclusions:



The stitch turned into a runner

First, that hand examining for a limited number of dozens was superior to inspection on the plain forms. This was indicated when a few stockings were re-examined over the hand as a check on the

(*Continued on page* 713.)

Discussion Division for Knitters in South is Formed

Meeting in Greensboro, April 15th

DEFINITE PLANS have been made for the formation of a discussion division on hosiery manufacturing, as a part of the Southern Textile Association, which for about ten years has been conducting discussion meetings relating to carding, spinning, weaving, etc.

Preliminary discussion of these plans was held at a meeting at the Sheraton Hotel, High Point, N. C., on Wednesday, March 5th. This was attended by a number of knitting mill superintendents and executives, and was presided over by T. W. Mullen, chairman of the Association's board of governors. Mr. Mullen, and Walter C. Taylor, secretary-treasurer, and others, spoke briefly of the work conducted in the discussion meetings of the cotton mill men, and the knitters present expressed themselves as approving such a group for the hosiery mill men.

Later announcement was made that the first meeting of the hosiery division will be held at the O. Henry Hotel, Greensboro, N. C., on Tuesday, April 15th. The list of questions hereto appended, and others, will be used as the basis for discussion. The meeting will be conducted under the auspices of the Spinning Division of the Association, and spinners and knitters will attend, with a view to creating a better contact between the users and manufacturers of knitting yarns.

It was stated at the High Point meeting that superintendents, assistant superintendents, foremen, dyers, finishers, etc., of hosiery mills of all types—including seamless and full-fashioned—and any others interested in technical discussion, are urged to attend the meeting in Greensboro on April 15th. It was at the same time emphasized that the meeting will be devoted entirely to technical, practical discussion of mechanical and other mill problems. Those attending are invited to bring any questions of a practical nature for discussion at the meeting.

The questions which will be among those used as a basis for the discussion are:

1. How do you eliminate sleaziness?
2. Which is better, the two-bath or the one-bath method of dyeing?
3. What is the best temperature to use on your forms for silk or rayon hosiery?
4. Do you prefer bottle bobbins or cones, and why?
5. Do you believe in having humidity control in your knitting room; if so, how much?
6. Which is better, artificial light or daylight?
7. What type of artificial light do you prefer?
8. How often do you change sinker on fine-gauge work?
9. What method of lubricating do you advocate for your machines?
10. How do you condition your rayon for knitting?
11. What is the best method for dyeing rayon hosiery having a mercerized top, heel, and toe?
12. How do you reclaim your defective merchandise?
13. Do you back wind your half-hose tops or sell them for waste?
14. How do you locate defective needles on a circular machine?
15. How do you prevent sinkers from clogging with lint?
16. Do you check your needle breakage?
17. Which do you prefer, 23% or 25% boil-off on silk, and why?
18. Have you tried hydroscopic silk, and what were the results? Or do you prefer to back wind?
19. What do you consider the major requirement of a good knitting yarn?

The most secure, the most profitable hosiery mills today are those operating modern Reading Full-Fashioned Machines.

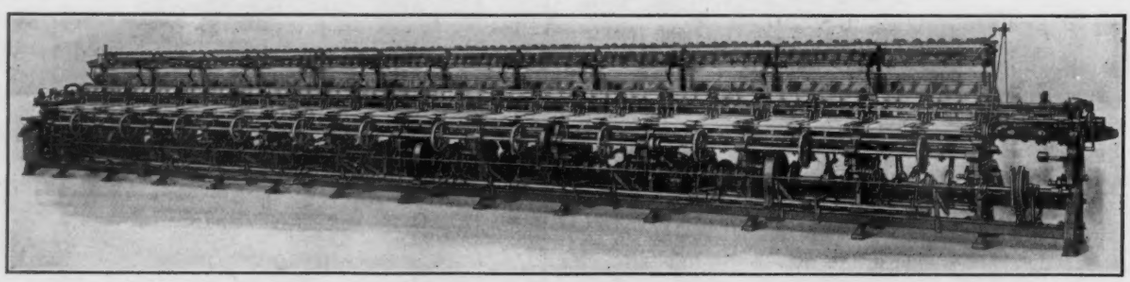
Their fortunate position is no accident.

The Reading Machine is the acknowledged leader in the full-fashioned field and has made millions for America's leading stocking manufacturers.

Look the industry over and you will find that . . .

mills operating Reading Full-Fashioned Knitting Machines are always in a better position physically and financially to meet market conditions

TEXTILE MACHINE WORKS - READING - PENNA.



The Reading Full-Fashioned Knitting Machine as it stands today—after 32 years of development—is the lowest priced, highest producer ever offered.

A History of Hosiery Inspection.

(*Continued from page* 711.)

operator of the form. *Second,* for an entire day's production the metal forms enabled the operator to reduce the number of defects missed, to a lower percentage than could be secured by the hand examiner.

This was a repetition of the experience with the home-made wooden forms. The difference was, the metal forms showed better average results than the home-made forms. This applied especially to those of circular shape. Enameling them black to show a greater contrast between the undyed stocking and the form caused the defect to show more distinctly and reduced the percentage of missed menders.

However, the problem was still a long way from being solved satisfactorily. The problem of inspecting hosiery seemed to have resolved itself into trying to decide which method left the least evil in its wake. Gradually, it became the hope of some manufacturers, who thought carefully on the subject, to get a device that would combine the advantages of the two methods of inspecting. *First,* to get something that could change its contour after the stocking was drawn on, and adapt itself to the corners and requirements on the inside of the stocking, the same as the human hand did. *Second,* to have it in the shape of a metal form that would be rigid, and smooth, and spread every stitch of the stocking and embody the advantages of the metal form.

When the wearing of silk hosiery became general, another requirement appeared, particularly in ladies' full-fashioned hosiery. Full-fashioned hosiery is liable to have stitches dropped in the calf of the leg, where the stocking narrows. They are merely pinched fast by the surrounding stitches, and the loop is not fastened. When these calf narrowing stitches are pulled on an ordinary form they cannot be stretched very taut. The result would be that when the stocking was degummed, dyed and boarded, the stitch which was not properly knit in but only pinched fast by the adjacent stitches, became loose and turned into a runner that reduced the value.

Many firms tried to overcome this difficulty by endeavoring to break out these stitches in the inspecting process. Some had their hand inspectors draw a finger with a thimble on it tightly across the narrowing stitches on the inside to break out these blind stitches. Others after drawing the stockings on the forms, would rub the stitches with a piece of smooth metal or other hard object when the stocking was on the form. Without the rubbing there was practically no protection against some of these stitches being passed by the inspector. With the rubbing, the additional percentage were opened up but as there was very little stretch given the fabric, the benefits it gave were limited.

Further developments on the part of inspecting form manufacturers were designed to meet this third requirement. There was a demand for a device that would thoroughly stretch the calf narrowing stitches, and that would open and expose any that would not be strong enough to wear.

TO THOSE WHO THINK THAT ALL FELTS ARE ALIKE

If there is a full fashion knitter who thinks that "felt is felt" regardless of make, he should consult an Aetna Felt user. He would learn from him that Aetna brand is different —that it imparts sufficient moisture to the silk or rayon yarn with as little tension as possible. This eliminates excessive wear on the thin steel tubes in the yarn carriers. He would also learn that the uniformity, and adequacy of moistening with Aetna Felts means a continuously even stitch.

Give the sinkers and dividers on your machines a chance to do their work properly. Specify Aetna Felts.

THE AETNA LINE INCLUDES

Strips, Wicks, Washers, Cone Covers, Bobbin Felts, Quiller Washers, Friction Washers, Race Plate Felts, Pressure Roll Felts, Rubbing Machine Washers, Roller Cloth, Endless Felts, Clearer Cloth, Slasher Cloth, Lapping Cloth, Extractor Cloth, Steaming Blanket.

Special Cloths of all kinds to your specifications.

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Spring styles

breathe promise of a prosperous year for King Cotton

..fashions for spring-summer, 1930 emphasize styled cottons —cottons that are identified.... trademarked...

FROM Paris and Palm Beach, from the Riviera and southern California, come reports of the fashion-prominence of cotton. Leading the movement are dressmakers both in this country and abroad who are using cotton for all types of costumes —morning, afternoon, evening.

Observers such as the Cotton-Textile Institute, Inc., as well as leading manufacturers, see in this new allegiance assurance that 1930 will be a boom year for styled cottons.

Trademarked Fabrics in Demand

Many cotton manufacturers have already prepared to meet this demand with materials that are marked with their name or trademark. They have learned that consumers favor cottons bearing an identifying name or mark. To women it is a guarantee of quality and style—a guarantee of protection against inferior substitutes and inflated prices.

Manufacturers have learned, too, that trademarking enables them to bring new effectiveness to their ad-

vertising. It encourages women to tell each other about their fabrics. It creates ready recognition and fosters repeat sales.

How Kaumagraph Is Helping

Today more than ever before, executives throughout the cotton industry are depending on Kaumagraph for assistance in marking their fabrics. And Kaumagraph comes to the rescue with the experience gained in 27 years' leadership in trademarking and identification work . . . with the facilities of the only complete service of its kind in the world.

Kaumagraph services include: an Art Department for help in designing trademarks; a Transfer Department specializing in Kaumagraph Dry Transfers, for over a quarter of a century the standard method of applying trademarks; a Research Laboratory available for help on any unusual problem; a department of trademarking machinery to facilitate application of trademarks to fabrics; and a Legal Department skilled in trademark registration procedure.

All the resources of Kaumagraph are at your command in connection with any matter of trademarking or identification. We will be glad to mail you additional information—or to send a representative.

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Full-Fashioned Group Division Planned

Efforts Being Made to Form a Special Division of National Association for Manufacturers of Full-Fashioned Hose

THE NEXT MOVE in the proposed organization of a full-fashioned hosiery manufacturers' group, for stabilizing conditions in the industry and eliminating destructive policies, will be the tabulaton of information contained in replies from manufacturers to a questionnaire submitted by a committee of three manufacturers, to which meetings during January and February had entrusted the matter of recommending a course of procedure. The committee consisted of:

Ferdinand Thun, Chairman, who is president of the Berkshire Knitting Mills, Reading, Pa.

William Meyer, president of the Apex Hosiery Co., Philadelphia.

Max Freschl, vice president of the Holeproof Hosiery Co., Milwaukee, Wis.

According to the committee's report and recommendations, sent to approximately 350 manufacturers on March 15th, the dues would amount to about one dollar per machine each month per mill organization. It is noted the report makes no mention of the Philadelphia Textile Manufacturers' Association or of C. Marlin Bell, managing director of that association, who, it is claimed, originated the plan and arranged for all of the meetings leading up to the appointment of the committee.

At a meeting on March 12th, attended by hosiery manufacturers and representatives of the Department of Commerce, an exhaustive discussion took place on the problems of the full-fashioned hosiery industry.

It was reported as the unanimous opinion of all present that group activity would be an important benefit to the industry. It was pointed out that economists have recognized that production capacity should be conservatively based upon a careful study of normal demands—and this fact is emphasized in George William Taylor's book, "Significant Post War Changes in the Full-Fashioned Hosiery Industry." Unsound production policies, the report of the committee states, "result in wasteful over-equipment. Other and older industries are suffering from over-equipment because they have lacked guidance. The full-fashioned hosiery industry is still in a healthy condition, and, provided the demand for the product is kept active and perhaps given a stimulant, is not yet over-expanded. Professor Taylor aptly points out, 'since the trade association with regulated powers is as yet non-existent in the full-fashioned hosiery industry, the business executive of the industry must realize that management on a buyer's market is quite different from management on a seller's market. On a seller's market, production is but the hasty wasteful process of giving material things a form or other quality which will satisfy an insatiable but not over critical demand; on a buyer's market, it must be more precise and economical.'"

Due to the need of organization, the committee has recommended the following steps:

First. That an association of full-fashioned hosiery manufacturers be formed to comprise the entire United States. That this association be known as the full-fashioned group of the National Association of Hosiery and Underwear Manufacturers, with a vice-president of the association as chairman, and an executive secretary employed solely for this group to work under the vice-president in charge. This executive secretary shall also be the treasurer of the fund of the full-fashioned group.

Second. That regional groups of the industry be formed, comprising the following groups: Philadelphia and district; Reading and district; New York, New Jersey and New England; Southern states; and Western states. That each of these groups have a separate organization, with a chairman who would be delegated to represent them in the national group.

Third. That each firm joining the full-fashioned hosiery association obligate itself to pay an assessment equal to $4.00 per month for each footer now in operation or ready for operation. For the expenses of the regional groups the fund of the national association's full-fashioned group may be drawn upon. The National Association of Hosiery and Underwear Manufacturers will charge a fair percentage of its overhead, rental, etc., for extending its facilities.

Fourth. The National Association of Hosiery and Underwear Manufacturers' full-fashioned group shall work out standard specifications of merchandise with as wide a variation as called for by consumers' demand and existing equipment.

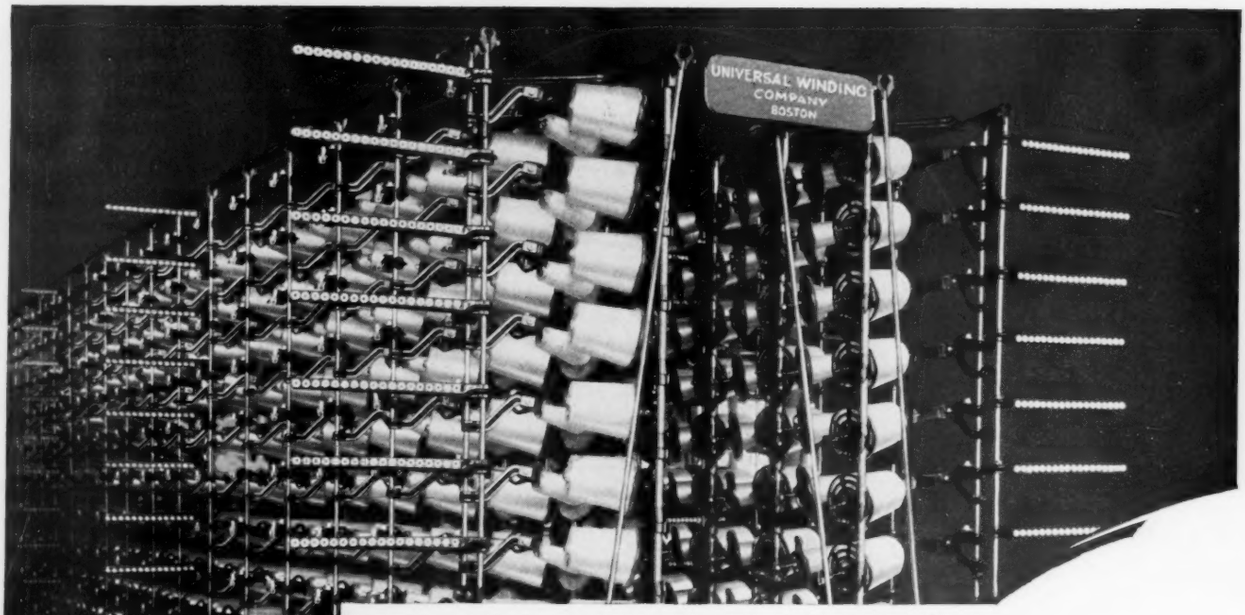
Fifth. A market research is contemplated to determine the potential consumption requirements for women's full-fashioned hosiery.

Sixth. A sales promotion campaign is to be considered, in order to create and stimulate consumer interest in our product.

Seventh. A policy of establishing trade practices and correcting existing trade abuses is to be given consideration.

Eighth. The question of stabilizing the market by curtailing production, or otherwise, is to be taken care of by a council in which the delegates of all sections shall have a voice.

The foregoing conclusions were reached by the committee after several weeks of intensive study, and the committee feels that if the demand is strong enough for this type of group activity, at least 75 per cent of the industry, by machines, should enroll. The tabulation of the replies to the questionnaire mentioned will be made and the trade will be advised of the results and further steps.



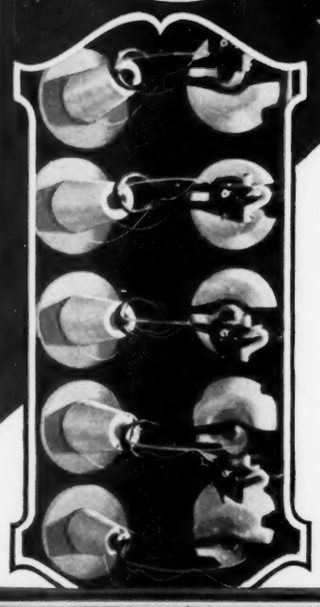
Warping Rayon at 150 Yards a Minute

UNIVERSAL HIGH SPEED RAYON CONE CREELS provide a smooth, overend delivery of yarn from cones, permitting a yarn speed limited only by the maximum speed of the warper — usually from 125 to 150 yards a minute. No abrasion of yarn or straining of fibre occurs as when Rayon is drawn from spools. Universal cones, containing from 1½ to 3 pounds of Rayon furnish an unbroken supply for warping at high speed.

More important, however, than the productive gain, is the improvement in the quality of the warps, due to the uniform tensioning of the ends. This is accomplished by patented UNIVERSAL individual tensions. Slack or tight ends in the warp are entirely avoided, and the result is reflected in a higher quality of fabric from the loom.

Incidental savings of waste, of expensive spools, and of power and floor space, if rayon is purchased on cones, invite a study of UNIVERSAL HIGH SPEED WARPING applied to your particular problem. UNIVERSAL Creels can be used with sectional or horizontal warpers, and can be equipped for single or magazine cones.

LEESONA



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UNIVERSAL HIGH SPEED WARPING

Pyramiding . . . in tones of beige on a tonal ground developed in crêpe romain or chiffon . . . a design by National for suit-themes . . . very tailored.

Orchideé . . . an exclusive National design for triple ply chiffon . . . developed in orchid and blue on a deep purple-blue Marie Laurencin ground.

It is nice to be *sure*.

Style is elusive. Quality is largely hidden. Yet your processing must capture the smartness of right style feeling . . . must be handled with the skill and experience for unfailing quality.

That is the reason for using National service. *Processed by National* means surety . . . to you and to your buyer and to your buyer's buyer.

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Piece Dyeing—Weighting—Finishing—Moire—Hosiery—Roller and Screen Printing—Rayon and Celanese—Ribbons—Skein Silk—Knitted Fabrics—Mixed Goods.

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NSDC

Reg. Trade Mark

NATIONAL

Getting Proper Tension on Seamless.

If you are using the old-style drum cam, or if you're not, you will be interested in this discussion of a seamless knitting problem.

EDITOR COTTON:

I have read with much interest the question submitted to the "KNITTING KINKS" department by "H. B. (TENN.)", published in the November issue, in regard to his trouble, on Scott and Williams machines, in not getting the ankle tight enough without showing loose and tight between the leg and foot tensions. He states that he is using the old time drum cam on this machine for the graduating purpose, and has this cam sloping, but has failed to get satisfaction as the result.

The writer wishes to state that in his opinion complete satisfaction is impossible so far as an even graduated ankle is concerned on a Scott & Williams machine so long as the old time drum cam is used. The reason for this, of course, is that the throw of the drum at each graduating kick of the machine drops the cylinder too suddenly, regardless of how the drum cam may be cut, also, the total distance of the three graduated kicks is not sufficient to get the effect which is desired.

As the remedy to this trouble, if using the old time drum cam, about all that can be done is to have the proper graduated angle on the cam, the proper spacing of the graduated links of the chain, depending upon the style being produced, and making certain that the cylinder is working freely up and down to allow it to drop easily at each kick.

I wonder if "H. B." is familiar with the Scott & Williams graduating attachment which is made especially for the trouble he outlined. As this attachment is inexpensive and completely puts an end to this trouble, I do not see why "H. B." wants to bother with the old method. The writer has under his supervision 300 Model K machines equipped with this graduating device installed on the machines six years ago. Before we installed them on the machines, we had exactly the same trouble as "H. B." referred to, but since the installation we have not known what this trouble is.

I would advise "H. B.", if he does not happen to know of this attachment, to get full information concerning it. Anyone who is producing quality hose surely would not bother with the old method when this new method completely puts an end to the trouble.

CONTRIBUTOR No. 4662.

We invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. All questions will be answered as promptly as possible. The names and addresses of the contributors must be given, but will be held in confidence and a pen name substituted when printed. All accepted contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statements of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

Asks About Bleaching Infants' Wool Hose.

Any readers with experience on this line of work are invited to submit answers to this question.

EDITOR COTTON:

We should like to have the opinions of some of your readers as to the best method or methods to use in bleaching infants' pure wool hose in order to secure a soft and fluffy feel. With regard to our particular conditions, I will give as much information as possible.

For the rib top, we use two ends of 1/50 worsted. For the foot, heel and toe, two ends of 1/40 worsted, and for the tip, two ends of 70s 2 combed peeler mercerized bleached.

Our hose are scoured for 45 minutes at 130 to 140 degrees F., in a 3 per cent olive soap bath, in a 100 gallon Monel metal paddle machine. They are then given two warm rinses and are ready to put in the bleach bath, which is an 80 gallon open Monel metal vat.

The bleach bath is made up of one gallon of hydrogen peroxide, 100 gallons of water, and enough silicate of soda to throw it on the slightly alkaline side, also about one per cent olive soap in the bleach bath.

The goods are entered at 120 degrees for between 1 and 1½ hours, holding the bath at the same temperature, the goods being stirred for the first 20 or 30 minutes. The vat has a lead coil and false bottom.

The goods are then given a 2 per cent olive soap rinse for 15 to 20 minutes at about 120 degrees, then washed in warm water, after which they are softened with 5 per cent softener. The goods are then extracted and boarded on a boarding machine.

CONTRIBUTOR No. 4711.

Disagrees With "Tom" About Dyeing.

Doesn't like the idea of training a young high-school boy for the dye house. What do you think?

EDITOR COTTON:

Having read in a recent number of COTTON the argument of "Tom" answering some criticism that "Jack" had to offer about several articles that "Tom" had written giving advice on how a modern fine gauge seamless hosiery mill should be set up, and run in the most approved and modern way, I want to say that it gave me no end of amusement to see how confident Tom seems to be in his assertions.

Having already read his articles, but having paid scant attention to them at the time, I went back to find them and re-read them attentively after his argument with Jack appeared in the September and October, 1929 issues. Then I made up my mind to take a hand in this controversy and maybe I can show "Tom" also where he is wrong, prefacing my argument by the statement that I, too, speak with authority and experience, and will give him a chance to show me where there is any progress in "the most progressive idea that he advances."

My argument will not take the reader to the knitting room nor to the loopers. I am not interested in circular knitting machines. As far as I am concerned, let "Jack" and "Tom" set them up as they want. "Flexible" units or "rigid" units have no appeal to me, what I am most concerned about is what Tom said concerning the dyeing. Here is where he stepped on my pet corn, and I resent it. That is the reason this is written. He brings up an argument that is easily believable by few, for there are in this country some who really think exactly like Tom. When I read the argument he put up with Jack, that he can take a bright high school boy and teach him in 60 days to match shades, something happened just then that convinced me some people who are in authority in the textile field actually believe yet the era of the trained dyer is at an end.

Here is what happened: In a hosiery mill, not many miles from here, a dyer who knew his business well, was in charge. He knew it so well that in a short time he found that his job was too small, and had plenty of time on his hands so he obtained permission to do some dyeing for outside people. After a while he built up a nice trade of commission dyeing, and was earning more than his salary dyeing for others, and the mill had their hosiery dyed for nothing. That should have been satisfactory all around, apparently, but it was not so. The manager who saw the work done so easily, and thought like "Tom" that any high school boy could learn easily how to do it, started to heckle and harass the dyer with a view of making him quit and try out his pet idea. Failing in that, he cut his salary and that gained his end for him. The dyer quit. Another was put in his place. It was not quite a high school boy, but a novice and what happened is easily imagined. Soon after the dyer quit, the manager had a conversation with a friend of mine, from whom I heard the whole story, and this is what he said: "Well, we finally got rid of that cocky dyer. He wanted everything his way. We got another that is not as good, but we will teach him. The day is coming when the dyers will not be so necessary as they think they are." 'So," said my friend, "how do you know you can get along without him?" "Shucks," he answered, "other mills get along without him, why not I? We will teach our new man to do what we tell him, and he will listen. We could tell the other nothing." "But he was giving satisfaction to you, and to his customers." "Yes," he admitted, "but why pay so much for a dyer when you can get one for half the price?"

That manager is a wiser man now. After having changed several ambitious young men, lost his outside commission dyeing, and a lot of goods ruined by his inexperienced dyers, he is now looking for a man to take care of his dyeing as it should be done. The lesson, although expensive, will do him good.

Now "Tom" claims that any ambitious, high school boy, without any knowledge of chemistry or without knowing much about anything else can be taught to match shades in a laboratory in 60 days, and he is quite certain of what he said because he tells "Jack" that if he has such a boy to send him up to him and he will do it.

Of course not knowing who "Tom" is, nor where he is, the challenge cannot be taken up, and even if it could, the question would still be where to find such a super-high-school-boy that could be made to perform such a feat, learning to match, to sample silk and mercerized cotton hosiery better than a chemist graduate he knows.

Now a chemist graduate is not necessarily an experienced dyer. No technical school makes a claim to turning out experienced dyers. Their graduates still have to gain the needed experience in a practical way in the dye-house. Given a chance with some good dyer, owing to their acquired technology, they will readily and quickly learn how to combine dyestuffs, and actually do dyeing. Left by themselves it would take them longer, but a high school boy, even under the tutelage of "Tom," I am afraid, will be a dismal failure as a practical dyer.

Now, tell "Tom" to hold his horses a little longer until I tell more. Supposing his boy learns to match shades in a laboratory, he still has to learn to match a lot of goods in the dye-house. With his formula from the trial sample in the pot, he must make out the amount of dyes needed on a larger scale, and that is something else. Any dyer, or chemist will tell you that I am right. He will have to learn how to match correctly a stocking, and find the proportion for 25 or 50, or 100 pounds of stockings. If "Tom" has ever dyed anything from a laboratory formula to a machine full of goods, he must know that results are never the same. He will have to add and add and add, or maybe reduce some of the color. It may be the silk that has come up too dark, or maybe the cotton is off. Most likely either one or the other fibers show streaky. Sometimes the lot is all spotted with greasy pellets, most distressing occurrences that need not take place in any dye-house, but do occur for more than one reason, hard to un-

derstand but nevertheless an actual fact. Will his boy know how to correct them and finish a presentable job, and will he know how to prevent such occurrences in the future?

I will admit for the sake of argument that "Tom" actually can train a boy to match shades on hosiery in not sixty days but one year, which is little enough, without belittling the intelligence of any high school boy. His boy will take his formula and go in a dye-house, and dye some given shades correctly. Maybe, or maybe not, he will have to make some addition of dye-stuffs. Will he know how to do it? The fact that he learned to make the addition in the beaker successfully does not mean that he can do the same in the machine. Maybe "Tom" does not know that it is very hazardous to add dyes in a bath in a machine full of goods, and none but the most experienced can do it safely, and sixty days is a very short time to gain the experience necessary even for an intelligent high school boy.

Now "Tom" claims that this is "the most progressive idea he advanced." No doubt meaning that nobody ever thought about it before. Dyeing is so easily done these days with such a long list of excellent dyestuffs to choose from, any man with the average brain under his hat can learn how to manipulate them under the proper tutelage, but his idea is no more advanced than would be that of a man propounding the making of a better buggy in this age of automobiles and flying machines. When dyers had to make their own dye-stuffs, dyers were a very secretive sect of people, none but the immediate relatives were let in on the secrets of dyeing and they were very jealous of their achievements, to the point of being thought autocrats by their fellow workers, and even by their employers. The advent of the coal tar dyes, and the rapid expanse of the dye-stuff industry, changed all that. The old formulas being discarded, and the new formulas much easier to combine taking their place with dye-stuffs ready made, dyeing was considerably simplified. Then, too, the dye-stuff makers came out with the offer to mills to match in their laboratory any sample submitted, and to send trained demonstrators to show anyone how to use the new dye-stuff. That was the time the idea was advanced that there was no need for a dyer anymore. The dyer's day of doom had come, and that was the time "Tom" could take a high school boy and teach him in sixty days how to use dye-stuffs, match shades, and take care of a dye house with the aid of a demonstrator, but that was a long time ago, even before the first automobile was seen on the road. Many things have happened since, and while that was a good idea at that time, it is not so good now. It has been discarded along with the buggy long ago.

Of course, I will not go on record as saying that it is not being done. There are mills using that kind of a dyer, but I can state with certainty that the economy practiced in a dye house with an inexperienced dyer will not pay big dividends.

At the time when "Tom's" "progressive idea" was generally accepted and the delivery from the cranky autocratic dyer hailed as a Godsend, most fibers were dyed in skeins, matches were not very accurate and nobody cared much. Mills were used to poor matches, but gradually dyers began to compete with one another, and the best dyer advanced quickly, the poor one going out of business. The trade became exacting, then piece dyeing came into use and fabric containing fibers of different nature had to be dyed in solid shade, or in contrasting colors but matches had to be exact, and the dyer producing the best work came to the fore, and remained there. If "Tom" is an old man, and has seen service in a dye-house, he will know that some years ago dye-stuff manufacturers used to sell dyes that were readily mixed to use so much for a given shade out of only one can or barrel. That is done away with, and mixing of dyes is done in the dye-house. Can "Tom" explain why the change occurred?

That made it easier for the high school boy, but it was found that the prepared mixture did not always work the same, and "Tom" knows that only type dyes can be bought now because he said that it takes no more than eight dye-stuffs to match any current shade. Right here let me tell you that "Tom" is a poor instructor of dyeing and matching because using so many different dyestuffs for any shade makes for mistakes and difficulty of duplication. If he really knew how to mix dyes he would know that number of dyes is too high. In our place we have about forty shades to match at all times, none of them has more than six and very few with that number, the average is five—some of them have as little as three. That apparently should make it still easier for the high school boy, but the difficulty is in finding the proper dyes, and of course that may not be so easy as it sounds, and in sixty days there cannot be much time to waste on testing dye-stuffs, much less in looking for them.

FARBER.

Elimination of Wear on Sinkers.

A practical discussion of a common practical problem, and a suggested remedy for it.

EDITOR COTTON:

One of the most common difficulties encountered on fine gauge seamless knitting machines is the wearing of a groove in the sinkers at the point indicated in Fig. 1. The cause of this wear is due to several things, which will be explained, but the main cause is due to the improper adjustment of the bumper screws on the outside sinker ring cap.

At the knitting point on the machine as the needles take the yarn from the hooks of the needles as they just pass below the top level of the sinkers the yarn feeds across the sinkers at the point shown in the illustration. As the yarn lies across the sinkers at the same place at each revolution it can be seen that the eventual result would be the wearing of a groove in the sinkers.

As most knitting machines require a certain amount of tension on the yarns in order to plait different yarns, this trouble is more pronounced due to

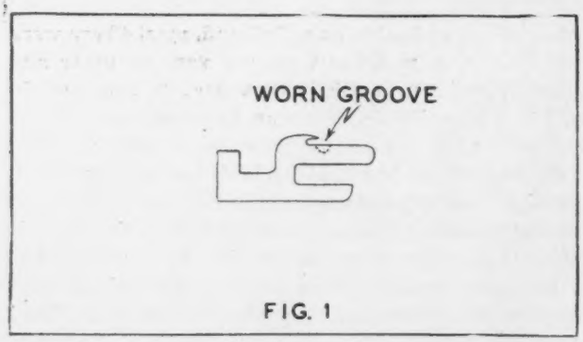


FIG. 1

the fact that the yarns pull tightly across the sinkers at the point of this wear. It has been found by experience that this trouble can be cut considerably by the simple adjustment of the left hand bumper screw on the outside sinker cap.

The main cause of this wear is due to the sinkers at the feeding point, as explained, being stationary at the time the hooks of the needle pass below the level of the sinkers, thereby causing a groove. By adjusting the sinker cap left bumper screw so that the sinker will be moving inward at the time the hook of the needle passes below the level of the sinkers, a saving of yarn is created and the yarn does not lie in the same position across the sinker at every revolution of the machine. Care must be taken of course not to set the bumper screw adjustment around too far, for this would cause the nibs of the sinker to project in at the knitting point.

CONTRIBUTOR NO. 4694.

Keeping the Cylinder Down.

EDITOR COTTON:

In a recent number, you published an inquiry from "CONTRIBUTOR NO. 4620," who wanted to know how to keep the cylinder down on Model K Scott & Williams machines equipped with the stitch graduating attachment, to gradually tighten the stitch from the boot to the ankle. He pointed out that he had difficulty with the cylinders not dropping down to the proper level at graduating kick, causing the length to vary considerably. He said that in order to overcome this trouble he has done several things which have helped, but wanted more advice. He said the set screw on the cylinder tube arm just above the sinker ring cap is set down as closely as possible without having the top pick when making the reciprocating motion. He also fastened a large screen door spring to the cylinder tube to pull the cylinder down, and said he keeps the insides of the cylinders well lubricated.

The failure of the cylinder to be lowered at each rack of the stitch graduating wheel is generally caused by too much friction on the needles or lack of lubrication. Even with these conditions the cylinder can be made to drop by reducing the number of needles bearing on the cam. The right-hand side of the sketch, Fig. 1, shows the upper jack cam cut 1/32 inch lower except for the first ¼-inch. The left-hand side shows the fashion seam draw-down cam set the proper height, which leaves the needle 1/32 inch above the cam under it. If this man's machines are equipped with fashion seam attachment, he will very likely find the trouble at this cam, and it will not be necessary to alter the right-hand cam.

L. F. (N. Y.)

Answers to Full-Fashioned Questions.

Preparing silk for full-fashioned, sleazy knitting, and other topics of interest discussed by practical men.

EDITOR COTTON:

In the March issue you published some questions from "CONTRIBUTOR NO. 4696" with reference to full-fashioned hosiery manufacture, and I shall answer them in the order in which they were asked.

This man said, first, that he dyes his silk on aluminum cones which do not require back-winding. These cones, he said, are wound in what is known as open wind. The silk to be soaked for ten minutes and then be ready for knitting. He further asked whether a glycerine solution would be harmful in soaking this silk, using one quart of bleached glycerine to 50 gallons of water.

In reply to this point, I would say that I have no faith in the so-called method of "direct knitting" if the knitter is setting as his final goal, smoothly knitted fabric free from sleazy condition. This statement is not based on any prejudice against any particular type of cone or winding, but is based on much personal experience in trying to do what we now consider a fairly impossible thing to do, that is, to make a good

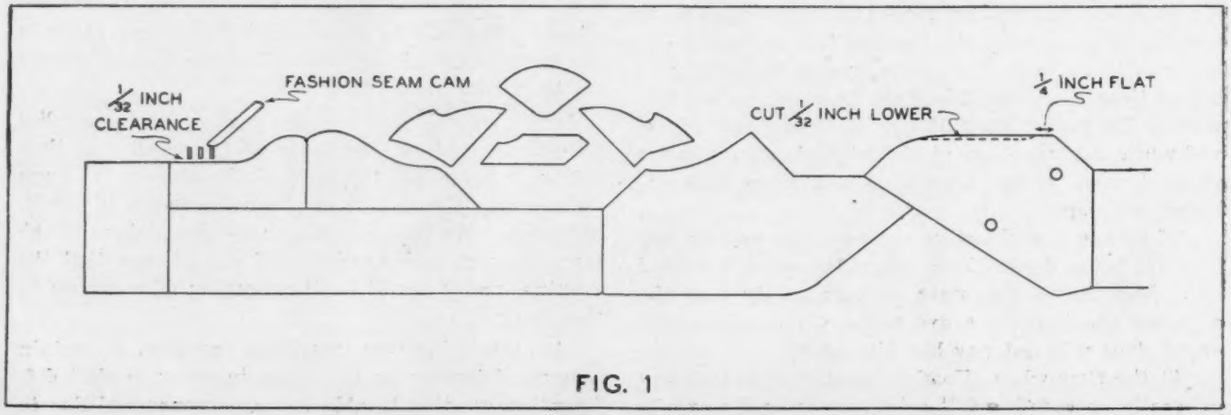
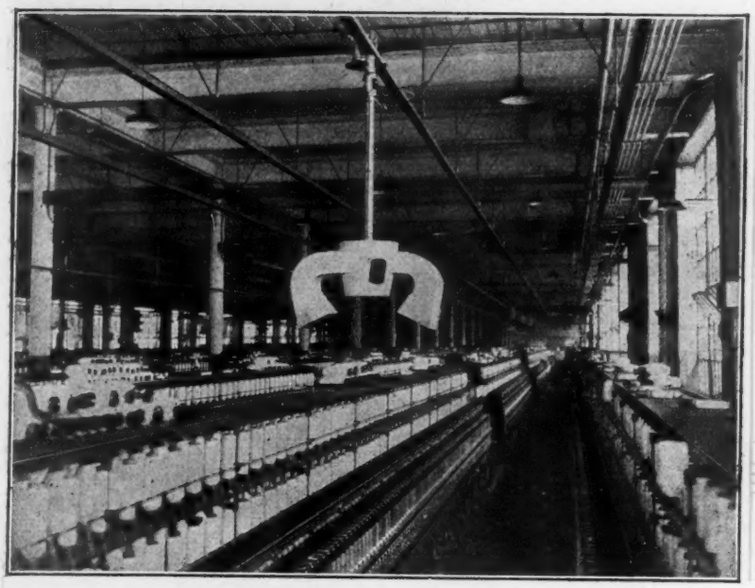


FIG. 1



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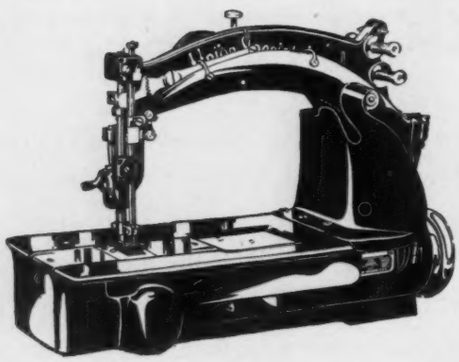

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C4-Gray

smooth fabric on a full-fashioned machine from gum silk without back winding the silk. Your inquirer states that he is using open-wound cones put up on aluminum cones, which are to be soaked for ten minutes and then are ready for knitting. It is possible that he might get fairly good results from such a cone if he would soak the cone in a good soaking solution for ten minutes as he says he is doing, and then place the cone in a well regulated conditioning room carrying at least 85 per cent moisture for a period of 10 to 20 hours before knitting. Referring to his question about the glycerine softener, I consider this a good product, and no harm will come from its use, and much good will be obtained if it is properly used.

This man brings up next the question of sleazy knitting. He asks, if sleaziness is caused from the knitting operation on the machine, why is it that one cannot see the disordered or tight and loose places in the stocking under a magnifying glass.

A condition of uneven stitch construction, which is now being interpreted under the wrong and yet accepted term of sleazy knitting, is not and cannot be produced in any way except by the knitting machine. The causes of sleaziness or distorted group of stitches are manifold, and when sleaziness is thoroughly analyzed it will be found to consist of distorted groups of stitches, sometimes too short, at other times too long, associated with the regular setting of the machine. They will also be found twisted, some to the right and some to the left, rather than in a uniform curve as a well formed stitch should be.

The cause most frequently referred to as being responsible for sleazy knitting is dry silk, and dry silk is certainly to be reckoned with as a contributing cause, but silk can be wet to the point of dissolving the gum to an extent of de-gumming, and causing the fibers to separate into a flossed condition for spaces of an inch or more, and this condition will produce a group of distorted stitches just as disagreeable in their appearance as those caused by dry or hard silk.

Other causes for sleaziness are such as: uneven tension, improper alignment of needles, improper setting of sinkers, and other important adjustments well known to experienced knitters.

Your inquirer states that these sleazy places cannot be seen on the gray goods by a magnifying glass. I think he must be wrong here. No magnifying glass is necessary to see the condition, and when a knitter once gets his eye trained to recognize the condition, it will stick out in the gray goods with as much conspicuousness as a wart on the nose. The dyer can do a whole lot toward correcting the trouble, and by improper handling can magnify the trouble, but apart from this he is in no way responsible and has too many troubles of his own for the knitter to try to saddle sleazy knitting off on him.

Your inquirer's last question was with reference to using 14-thread silk in the heel tab. He wanted to know whether it would be better to use two ends of 7-thread or one end of 14-thread yarn. He expressed the opinion that one end of 14-thread yarn would be harder from the standpoint of topping. This is purely a matter to be based on the construction of the stocking as a whole. If the gauge of the machine and the construction of the body of the stocking warrants the use of 14-thread in the heel, it should certainly be employed. But ordinarily a stocking of 7-thread construction and up carries all cotton in the heel tabs and at least silk plaited over cotton. So this item resolves itself into one of individual preference. If a man elects to use 14-thread in the heel tab, I would strongly advise using two 7-thread ends of silk, as it would certainly have a tendency to give a smoother fabric. However, contrary to his statement, one end of 14-thread can be handled by the topper with more ease than two ends of 7-thread.

CONTRIBUTOR NO. 4698.

EDITOR COTTON:

I note that "CONTRIBUTOR NO. 4696" desires to secure some information in reference to several matters pertaining to full-fashioned hosiery manufacturing and I will give my answers, which I hope will be of some benefit and help to him.

The first question he asks is, "Would it be harmful to soak silk in a glycerine solution, this solution being made up by using one quart of bleached glycerine to 50 gallons of water." He states that the silk is wound on aluminum cones and is soaked for about ten minutes. Anyone familiar with the use of glycerine for the soaking of silk knows that glycerine is highly hydroscopic and many of the sulphonated oils used by throwsters contain some glycerine for the purpose of making the silk somewhat hydroscopic, so that it can hold moisture for a period of time during the knitting operation. As far as soaking the silk in a glycerine solution is concerned, I can assure the contributor that soaking the silk in a solution of one quart of glycerine to fifty gallons of water will do no harm to the silk, but might say personally, that I do not believe that this is the method to use in the soaking of silk. My own experience has been that if one wishes to secure good fabric through dry package knitting that the best method to use is to place the silk in a conditioning room, conditioned through the means of a humidifier for at least 24 hours and through this slow conditioning, the silk will be moistened more evenly and prevent sleaziness.

Merely soaking silk for ten minutes in either water or some other solution does not moisten the entire cone of silk evenly and results in dry spots in various places in the cone and it is these dry spots that cause sleaziness when the hoisery has been dyed.

The second question asked is, "Why one cannot see sleaziness in stockings before they are dyed and still sleaziness will show after the goods are dyed." First of all, I may say to the contributor that I believe that some of the sleaziness that is in the stockings but cannot be seen before dyeing, is due to the methods he uses in soaking the silk. The dry spots I have mentioned do not always show in a stocking before it is dyed, but after the de-gumming process, the dry places bring out a distorted stitch, because the silk was uneven in moisture and a dry silk thread will never knit the same kind of a stitch that a moist thread will knit.

(*Continued on page* 729.)

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A Discussion of "It"

DEAR DAD:

I have read with a great deal of interest the article by OLD-TIMER in the January issue of COTTON entitled "It" and I have been running it over in my mind, trying to decide for myself just what "It" is. I have not reached any satisfactory solution of the problem, but I would like to have your views in the matter. I would like to possess an attractive personality.

With love to all the family, I remain,

YOUR DEVOTED SON.

DEAR SON:

I have your letter with reference to OLD-TIMER'S article entitled "It." Glad to note you are reading OLD-TIMER, as he always gives us something worth while to think about. He has given us a real problem here.

After giving the matter some thought, I have reached the conclusion that the "It" which distinguishes a man most is a store of new ideas and information. It is always a pleasure to talk with a man who has a thorough knowledge of the subject in which you are interested and happens to be one of those unselfish men who delight in helping others.

You can't help liking a man like this even though he may appear on the surface to be a grouch. I would rather work for a man who at times is austere, who is making a success of his business and sharing that success with me, than to work for one who is always genial and spends a lot of his time making me like him so well I will work for him for half pay.

A man who happens to possess that happy faculty of making many friends is indeed very fortunate, but to one who is not blessed with this characteristic can make a terrible mess by being insincere. The world will discover a hypocrite quicker than it will a thief. I would not concern myself greatly about my attractiveness, but determine to cultivate those sterling characteristics which will make you live straight, think straight, fight hard and fear no one.

The duties of the present day superintendent are quite different from what they once were. He used to be a big boss who carried a big stick and paraded about the plant with an arrogant air to maintain discipline. Today he must be a leader, who is doing some constructive thinking and passing new ideas down through the ranks. If he doesn't know what he is doing, his employees will be the first to discover it and take advantage of it.

The right type of operative does not require much bossing. He is responsive to constructive criticism from one who speaks not with the authority which his position commands, but rather with the authority which his knowledge and experience command. The superintendent who has new and progressive ideas, and has the ability to put them across, has the "It" that counts these days.

The superintendent must be an instructor or trainer of men. When you consider the possibilities that lie dormant in the average man, your work becomes fascinating. When you hear a man say his help is no good, he is casting a reflection upon himself. They are just what he is capable of making out of them. Did it ever occur to you that it is possible if the sweeper in your mill had been secretly exchanged in the crib of the president of the mill the night they were born, their positions today might be reversed? The sweeper never had an opportunity.

Thomas Gray has expressed the thought so beautifully in his "Elegy" in these two verses:

"Perhaps in this neglected spot is laid
Some heart once pregnant with celestial fire;
Hands, that the rod of empire might have
sway'd
Or waked to ecstasy the living lyre

But knowledge to their eyes her ample page
Rich with the spoils of time did ne'er unroll
Chill penury repress'd the noble rage
And froze the genial current of the soul."

So we have a big job to perform and a boundless field to work in. If we can help some poor devil live a little fuller life then our living is worth while.

When I consider our responsibilities I am reminded of the philosophy that Christ taught His disciples when the mother of James and John came to Him and asked that her two sons might sit the one on the right

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hand and the other on the left, in His kingdom. Read Matthew 20:26-27: "But it shall not be so among you, but whosoever will be great among you let him be your minister; and whosoever will be chief among you let him be your servant."

If we can apply this philosophy to our daily tasks and make a reasonable success of it, there will be no question about having a full measure of the "It" that OLD-TIMER speaks of.

I think every superintendent should come up through the ranks in order to have a sympathetic spirit towards his employees, but he should come *out* of the ranks with sufficient bouyancy and momentum to rise above the ranks of the ordinary superintendent. The textile industry is calling for the best brains available to lift it from an apparent state of decay. The standard of living among its employees must be raised. This can be best accomplished by the raising of the standard of its executive heads. There must be more incentive offered to young men of outstanding ability with constructive ideas to apply their efforts to the task of putting the industry back in its rightful position, where it will be profitable to both employer and employee. I trust that you will prepare yourself to measure up to the demands that will be made upon you.

With every good wish for your success, and with love from all the family, I remain,

YOUR DAD.

Answers to Full-Fashioned Questions.

(*Continued from page* 725.)

However, the contributor is right in his opinion that the dyer is a great deal to blame for sleaziness. In the de-gumming operation a lot of sleaziness can be prevented, if the de-gumming is done in a separate tub, instead of de-gumming in the dyeing machines. The dyer can also cover up sleaziness to a large extent by certain methods of finishing.

The third and last question asked is, "In wishing to make a 14-thread heel, would it be better to use one end of 14-thread or 2 ends of 7-thread?"

I judge that the contributor wishes to make an all-silk heel but he does not state what thread is to be used for the high splicing. If the high splicing is to be 7-thread, then by all means it would be better to use two ends of 7-thread in the heel first because of the fact that in making the heel after the splicing has been made, all that a knitter has to do is put in the heel carrier containing one end of 7-thread and continue making the heel, which means saving time and preventing loss of production. If 14-thread silk is to be used in the heel, only for the purpose of making a heavier heel and where only one carrier is to be used on each side of the heel, then I would say that one end of 14-thread should be used, as two ends of silk in one carrier always cause more or less trouble. From a standpoint of economy, however, I would never recommend that 14-thread be used when two ends of 7-thread will answer the same purpose. Seven-thread silk is commonly used today in all hosiery mills and is a thread that can be used for many purposes, such as heavier welts, resist dye for picot tops, as well as heel and toe reinforcing. This means that never is it necessary to have odd lots of silk on hand, whereas if one purchases a thread as heavy as 14-thread, then he has in the mill what might be termed as a mongrel thread. As far as topping and footing is concerned, I never found that it made any difference whether one end of 14-thread was in the heel or two ends of 7-thread.

I have, however, experienced that with one end of 14-thread in the heel that the needle breakage is greater, more stockings are spoiled and that needle smashes are quite frequnt because when the end breaks and the heel presses off the heavy single thread will smash many needles.

I hope that my answers will help the contributor and will only add that if I were he, I would try out these things myself, as these are just the problems that all of us have to solve by finding out what is the best method to use.

C. H. BAXTER.

Durene Association Activities.

THE HUB of the wheel in the promotional and advertising campaign of the Durene Association of America is the manufacturer of durene merchandise," George H. Ellis, vice-president of the Dixie Mercerizing Company of Chattanooga, Tenn., said in an interview given at the Durene Association of America headquarters, at 250 Fifth Avenue, New York City.

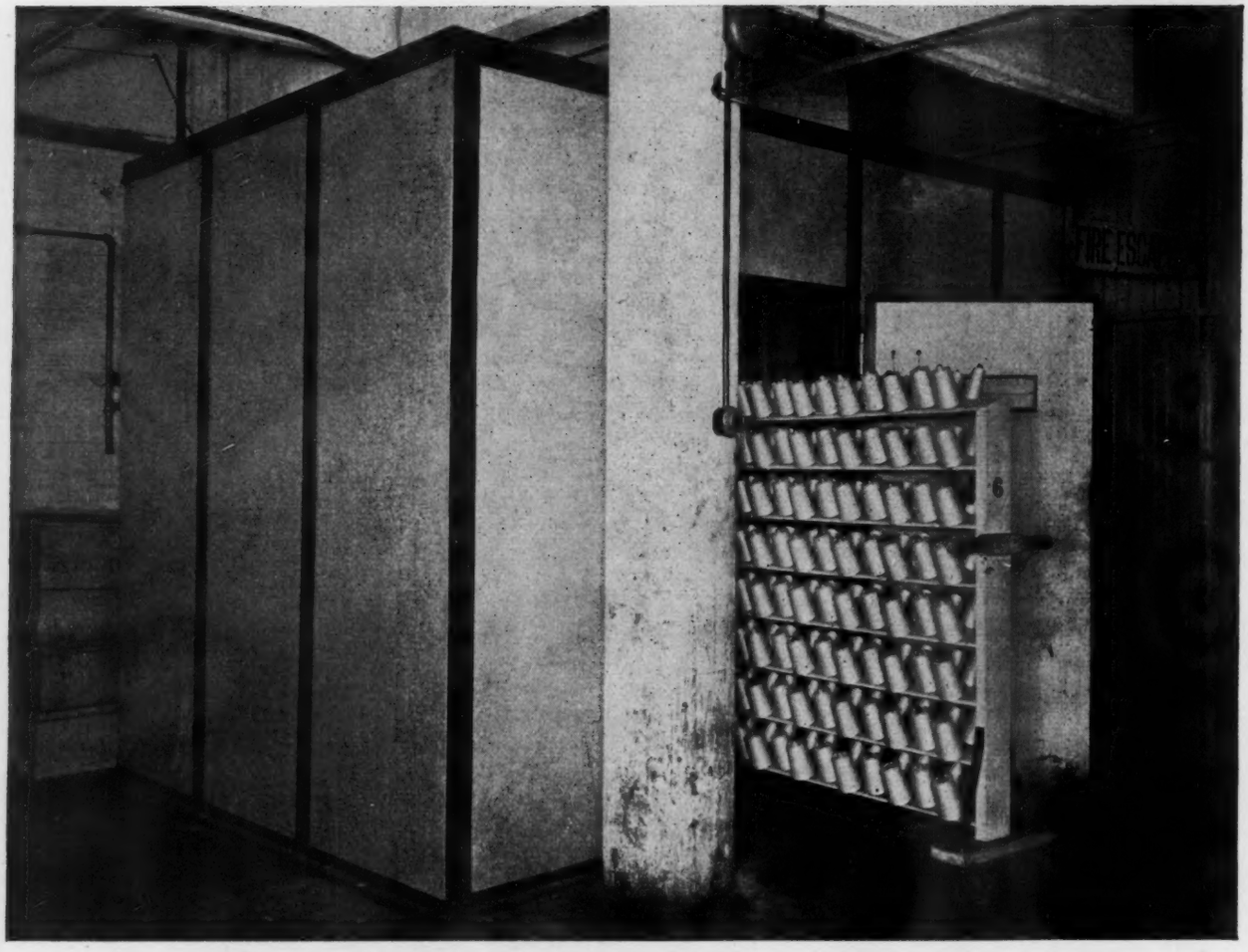
Mr. Ellis pointed out, however, that while manufacturers of garments and fabrics are the hub around which any textile promotion campaign must revolve, retailers are the allies whose understanding interest must be aroused and maintained.

"Unless," he said, "retailers visualize the value of selling mercerized merchandise of standard quality production, manufacturers depending upon such standard quality raw material in the form of yarn are handcuffed in their effort to add textile prestige to knitting and weaving prestige."

Clarence L. Meyers, president of the Clarence L. Meyers Co., of Philadelphia, visited the new headquarters of the Durene Association recently, and expressed keen interest in the advantages of a central location for the association's work and in the organization being built up under the direction of E. L. Starr, director and treasurer of the Association.

Mr. Meyers also commented on the broadening aspect of the durene field in the textile world. He pointed out that as much importance may be attached to the new opportunities and possibilities for usage which are opening up for durene standard mercerized yarns, as to the many staple and accepted uses which have become analogous with the older term mercerized cotton formerly used by leaders in this industry.

"Better uses, constantly improved uses, and maintenance of older uses familiar in the past may be briefly said to be the basic platform upon which the work of the Durene Association of America is standing," said Mr. Meyers. "This means that a steady forward movement is to be expected in this field."



Carrier Metal Panel Conditioning Room in which Silk and Rayon are conditioned uniformly on the Cone

Direct Knitting Made Possible With Manufactured Weather

DIRECT KNITTING, a long stride forward in the hosiery industry, is now made possible through the development of the Carrier Conditioning Room . . . in which the conditioning of silk and rayon is accomplished on the cone.

This means the complete elimination of costly backwinding. Through the establishment of uniform moisture content in the thread pliability is increased . . . slugs and sleaziness are avoided. The number of necessary press offs is reduced . . . operating and labor costs drop . . . the whole knitting process is vastly improved.

Coarse thread, as well as fine, may be conditioned by this equipment. The time required for processing varies with mill requirements and the character of the work.

Out in the knitting department, too, *Manufactured Weather* is improving the efficiency of the various operations and contributing to the uniformity of the quality of the hosiery.

Write for descriptive literature on this new and effective conditioning process, as well as general information on air conditioning in silk and rayon hosiery plants. Our engineers are prepared to visit your plant to submit recommendations and estimates covering equipment suited to your requirements.

Carrier Engineering Corporation

Offices and Laboratories
NEWARK, NEW JERSEY

New York Philadelphia Boston Chicago Cleveland Detroit Washington Kansas City Dallas Los Angeles

Among the Knitting Mills

MOUNT AIRY (N. C.) KNITTING Co., is now ready to install a large number of new knitting machines, which will double the capacity of the plant. There will be 45 new sewing machines and 28 new knitting machines. About 200 people will be employed.

Bossong Hosiery Mills, Asheboro, N. C., are having Lockwood Greene, Engineers, prepare plans for 1-story addition to their plant. Additional equipment will be installed to double the capacity of the plant for the manufacture of 42-gauge full-fashioned hosiery.

It is reported that 50 additional knitting machines are being installed in the Shoaf-Sink Hosiery Mills, Lexington, N. C. These machines, which are of the 340 needle type, will produce a finer grade of hosiery than is now being made by the company. This addition will give the plant a total of 240 machines.

A large knitting plant, with a capacity of 500 dozen hose daily and a payroll of from $5,000 to $15,000 monthly is to be established in Tryon, N. C., by the Southern Mercerizing plant. F. P. Bacon and W. C. Ward will operate the plant, while J. B. Carpenter is to be superintendent.

The Hill-Apperson Hosiery Co., Winston Salem, N. C., has been incorporated by W. P. Hill of Reynolds Park, with a capital of $40,000.

Additional hosiery machines will be installed in the Asheville (N. C.) Hosiery Company's plant, which was recently purchased by Theodore Y. Rodgers, of Philadelphia, and associates.

Lillian Knitting Mills, Albermarle, N. C., will install new machinery and equipment which will completely fill the new annex. When operation of the new machinery is started, they will produce 250 dozen pairs of full-fashioned hose per day and 500 dozen pairs of seamless hose per day.

Pilot Hosiery Mills, which are now in Lexington, N. C., will be moved to Asheboro, N. C., within the next 60 days. A new boiler room and dyehouse will be built, which will complete the plant into which they are moving.

R. E. Carpenter and C. R. Colquitt have chartered the Carpenter-Colquitt Hosiery Mills, Inc., Shelby, N. C., with a capital of $50,000.

C. & M. Hosiery Mills, Oxford, N. C., dyers and finishers of hosiery, recently installed 20 machines which brought their total to 50. The plant contracts for hosiery in gray.

The Cadet Hosiery Co., Inc., Philadelphia, are moving their 39-gauge machines to their plant at Columbia, Tenn. It is reported that all machinery will be moved to that plant.

It has been announced that work will start right away on brick and steel addition to J. H. Wilson Hosiery Mills, Chattanooga, Tenn., at a cost of approximately $15,000.

Everwear Hosiery Co., Chattanooga, Tenn., have installed machinery in the Benham Bldg., which will be used as a dyeing plant.

R. P. Shapard and his son, owners of the Spaulding Knitting Mills, have bought the Resolute Knitting Mills of Philadelphia and moved all of the equipment of that mill, which was new equipment, to Griffin, Ga. This addition increases the capacity of the Spaulding Mills about one third and gives employment to 125 additional people.

Wendell Hosiery Mill, Wendell, N. C., was completely destroyed by fire during the month of February. The loss was estimated to be about $35,000. It is believed that the fire was caused from a defective stove, in which the night watchman had just built a fire. It is understood that the mill will be rebuilt.

McPar Hosiery Mill, Marion, N. C., recently purchased a hosiery dyeing machine of 50 lbs. capacity. This machine is manufactured by Smith, Drum & Co.

Lyerly Full-Fashioned Hosiery Mill, Hickory, N. C., have been organized by B. and G. L. Lyerly and R. L. Bothwell, with a capital of $500,000. It is reported that the initial installation will include nine full-fashioned machines, which have been purchased, and that other equipment will be added later.

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HARD MAPLE HOSIERY BOARDS

Give you that much desired finish that cannot be obtained from any other than wooden boards.

You get the length, lustre, *feel* that the goods should have.

Our special finish is highly recommended for silk and wooden boards.

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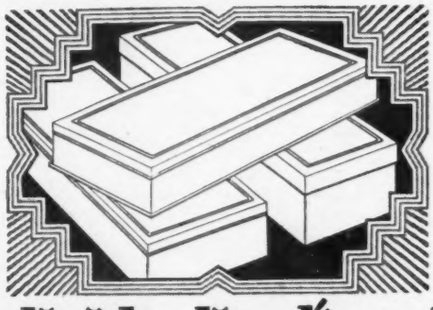

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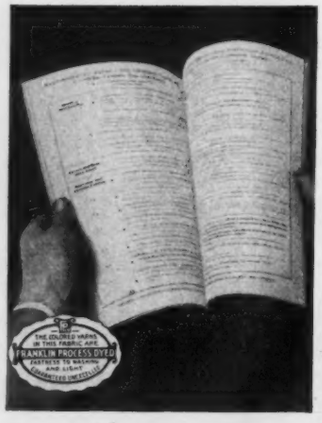

This Book introduces your color lines to more than 5000 buyers; this Label certifies your fast color values—use it on your samples.

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Fast Color Identification is today the Master Salesman. In the growing competition between Color and Fast Color, this Label used on your samples (see illustration) establishes your fast color quality *on sight*. That is a remarkable selling advantage.

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We offer this Plan and Merchandising Service Free. It costs nothing to install and nothing to operate. Full particulars are given in an authoritative new Report, "An Analysis of Competitive Selling of Fast Color Merchandise." This Report contains much that has not appeared elsewhere in print. The coupon brings a copy, complimentary.

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The KNIT GOODS MARKETS

PERPETUATION of the full-fashioned hosiery industry on a reasonably profitable basis seems not so much a matter of producing as cessation from production for a time. This proposal, from manufacturers themselves, first was given really serious attention, so far as the industrial public was concerned, by the committee which on March 15 reported its findings and recommendations to all of the full-fashioned mill heads. Its recommendation may be expressed in one word—organization.

That there was a chaotic situation in the hosiery industry was known to about everybody connected with it before the committee so stated in its report, but it was perhaps the first time that representative manufacturers, assumed to be clothed with authority to speak for the industry, had the courage to say so. The chaos, with its disturbing influence, is attributed by the committee to evil practices in the industry. One of these practices, it appears from the committee's findings, was an attempt to lower overhead cost by using the double shift in plant operation and it seems there has been oversight on the part of manufacturers to differentiate a seller's market and a buyer's market. But the industry is in a healthy condition, provided demand for the product is kept active and perhaps given a stimulant, and is not yet over-expanded.

This, then, as described by a committee after patient investigation, was the situation in the full-fashioned hosiery industry and its primary markets, at the very beginning of one of the two ordinarily briskest periods of the year, and, judging from the manner in which jobbers and retailers have been operating for four full months, stocks lower, probably than at the dawn of any given season in a number of years, and, assuredly, prices lower than in the ten to twelve years since they were at the peak for all time in the history of the American full-fashioned industry.

Lower Prices Fail As Corrective of Over Supplied Hosiery Market

LOW PRICES appear not to have stimulated the buying of women's silk full-fashioned hosiery, except, of course, for markdown sales in large retail stores. This served two good purposes; one, the moving of much distress hosiery into distribution on its way to the consuming public, and the other, enabling over-stocked financially weak manufacturers in distress to strengthen their bank accounts and, by profiting from experience, proceed on a more conservative basis. But this dumping necessarily promoted that "disturbing influence" of the hosiery manufacturers' committee stressed in its report.

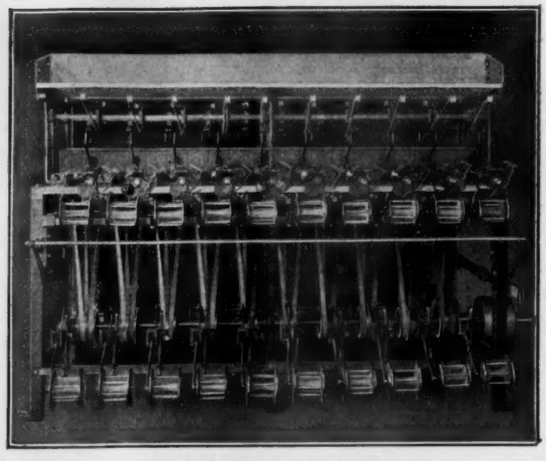
The price reductions of 25 to 50 cents by the Berkshire Knitting Mills and the Apex Hosiery Co. on March 1st neither checked that influence nor broadened it. What the two organizations did had been discounted in the trade and virtually passed unnoticed, for the time. Not until a month later did jobbers increase or advance their commitments, and even well toward the end of the month, retailers were hardly indicating their probable spring requirements.

It appeared that dealers, wholesale and retail, were not reconciled to the proposal prices could go no lower. In fact, prices under those of both the Berkshire and Apex were being quoted after the new lists of both companies had gone into effect. It was equally true that several manufacturers were quoting, and actually selling, 25 cents higher than practically identical Berkshire and Apex lines. These establishments supply a class of trade that attaches more importance to permanency of high standards of construction and mill service than to a difference of 10 to 25 cents a dozen pairs of stockings.

From the quantities of silk full-fashioned stockings that were dumped into department stores and specialty shops in February and March and the fact that this presumptive clearance of much distress stock failed to check price unsteadiness, it was regarded that there remained large stocks of gray goods at mills, as was the case at the end of January, when the holdings of mills reporting to the Department of Commerce were given as 3,603,394 dozens, an increase of 575,169 dozens from the end of December. As the same mills reported 157,487 more dozens produced during January and net shipments of over 400,000 dozens less, the larger stocks in mills are readily accounted for, and as orders booked during the month declined by more than 300,000 dozens, for the same manufacturers, the question has been raised in the trade whether the consuming public has not been pursuing the policy of dealers and making purchases only as needed and perhaps, carrying more stockings to repair shops for latching runners and darning.

It probably might be said without danger of successful contradiction that large retail stores buying hosiery for markdown sales forced lower prices from mills and that the result of their competition at the expense of manufacturers is a lower fixed price in the mind of the consumer. The damage to the industry, in this respect, seems to lie in the use of nationally advertised brands of hosiery for special sales at sensationally low prices.

Strawbridge & Clothier, Philadelphia, operating perhaps the most attractive hosiery department in that city, repeatedly has exploited brands made famous by advertising, the store in a way educating its strong clientele to wait for these special offerings. What this establishment is doing in the way of merchandising stunts doubtless is typical of what other equally pretentious establishments are doing. The company frequently uses hosiery described as irregulars "but nothing to mar appearance or impair wear." This usually draws "standing room only" crowds of shoppers, invariably embracing numbers abundantly able to pay regular prices but always out for "bargains".



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Lever No. 20 Cop & Bobbin Winders are especially designed for winding filling yarns such as Cotton, Wool, Jute, Worsted, Asbestos and heavier grades of yarn at a high rate of speed.

This machine handles the heaviest of yarns most economically from either skein, spool, cheese or other type spinning package.

Each bobbin is uniform in size, shape and tension—because of the positive gearing between spindle and traverse.

These features are but a few of the noteworthy improvements found on the Lever No. 20 Cop & Bobbin Winder.

You'll be proud and pleased with the Lever No. 20 Winder — and what's more you'll find it profitable.

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Women say they wait for these sales, one of which, conducted in March, played up irregulars of chiffons, silk top to toe, of an internationally known New York manufacturer, at 89 cents a pair, which was 76 cents under the everyday price of regulars of the same number. What are described as irregulars also are drawn from two other manufacturers selling nationally advertised lines to retailers direct and are used in the same manner, until it appears to the unsophisticated that the mills have a most wonderful production of irregulars and facilities for making them as "good as first quality." Thus are mills distributing through jobbers forced to pare prices to the bone, that their clientele may live.

Gimbel Brothers' Philadelphia store, which more than doubled the size of its hosiery department, has gone right to the price bottom with regulars which, as they carry no brand or mill name, doubtless are not supplied by direct-to-retailer manufacturers. The store in March staged the largest special sale ever undertaken in Philadelphia (accepting the comment of competing interests), selling all-over silk chiffons of 42-gauge and medium weight silk with interlined hem and cotton sole, both regulars and each at a dollar a pair. It was stated the stockings were from regular stock and that henceforth Gimbel's would carry dollar silk full-fashioned regularly. It was believed among manufacturers and store buyers that in one week the Gimbel New York and Philadelphia stores sold more than 100,000 pairs of stockings at the then special price of a dollar a pair.

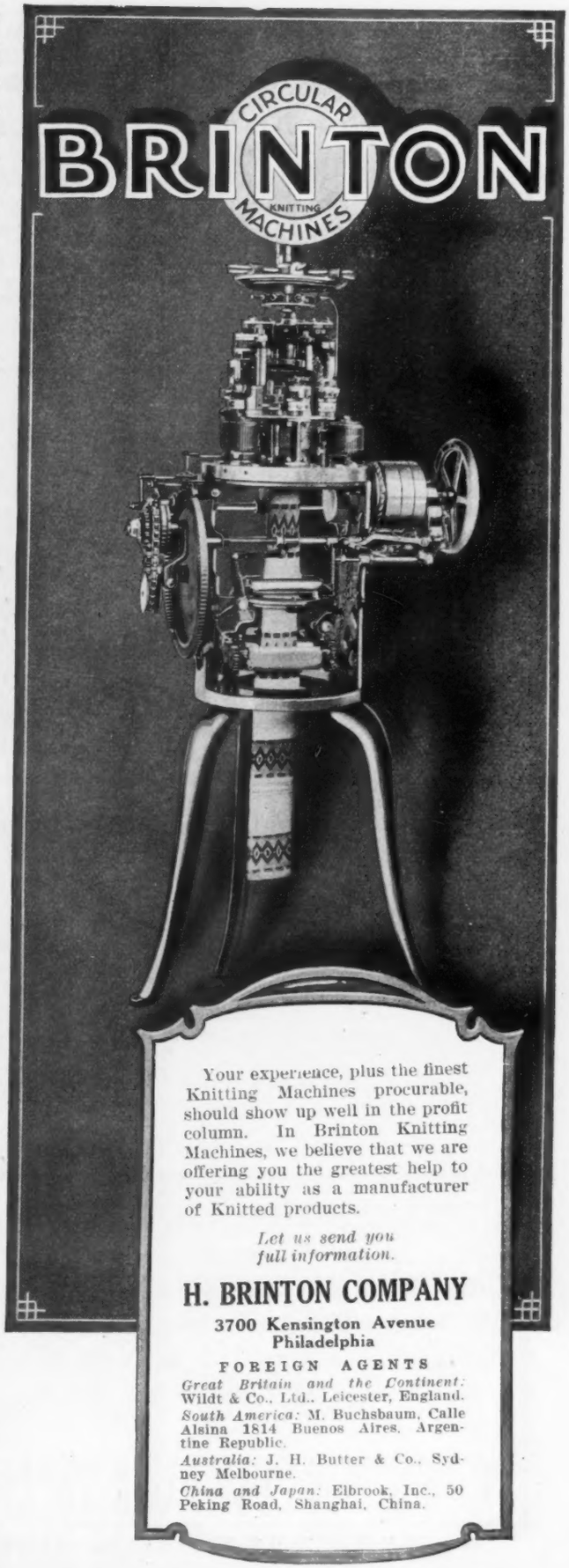
Mills Enable Buyers to Force Prices to Present Low Levels

BY OVERPRODUCING, as is pointed out, manufacturers supplied the groundwork for a dealer raid on prices, with the result women are getting the greatest dollar value in their hosiery they ever have enjoyed—and they know it. Now, say dealers, with lower prices established in the minds of stores and consumers, how long may it be before manufacturers will be able to restore a price level where profits which have vanished might be figured? A larger per cent of the full-fashioned equipment has been idle since January 1st than in the corresponding period of any recent year, it is admitted in mill circles, and construction work on several proposed new plants which by this time were to have been completed has not yet been started.

Primary market interests commenting on the possibility of present conditions continuing during spring, have expressed the opinion that unless there be material all-around improvement within the next month, the outlook must be for a protracted curtailment campaign during the summer months, when ordinarily production is reduced voluntarily as an expedient for placating mill help that has come to regard a vacation as a matter of course.

A drab market at this particular period may be accounted for in part by the fact there are practically no innovations. Stores have been afraid of novelties for the past year, and now view them as a more dubious proposition than ordinarily.

Excepting certain distribution centers, fancy heels have been crowded pretty nearly out of the picture by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The following statements are taken from letters received from users of Butterworth Hosiery Dyeing Machines . . . .

And concerns such as Owen Osborne, Inc., and Torresdale Hosiery Mills, gave us these letters only because they were pleased with the operation of the Butterworth Hosiery Dyeing Machines which they had installed.

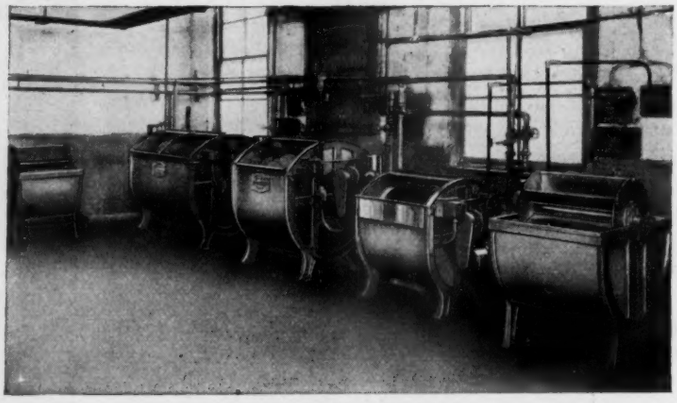
Copies of the letters, complete, together with folders on Butterworth Hosiery Dyeing Machines, will be sent promptly.

Speaking of the Butterworth Hosiery Dyeing Machines in their plant (see illustration at left) the Torresdale Hosiery Mills, (formerly Burlington Hosiery Mills), in Philadelphia, said:—

"Levelness of coloring and the fine condition in which the goods come from these machines is pleasing, and enables us to easily maintain our quality standards in this department . . . . We are pleased with our selection of machines . . . . We compliment you on the new cylinder construction."

And from Owen Osborne, Inc., of Philadelphia,

"Your willingness to place your hosiery dyeing machines on trial alongside competing ones is certainly justified by performance . . . We have found these machines with your new half round compartment cylinder construction very satisfactory both as regards dyeing ability and construction features."



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the chic French heel with its curve, and the modified square heel. The square heel of a few years ago appears in distress lots of hosiery. The picot top continues a strong talking point when distressingly low prices for seemingly average standard silk stockings are mentioned. But it is stated by numbers of retailer observers that, excepting very fine gauge high price numbers, many women prefer to pay less and get along without the Frenchy picot, and it is found that really good construction of 42-gauge is very acceptable at some current low prices.

Southern Mill Out to Buy 42 Gauge.

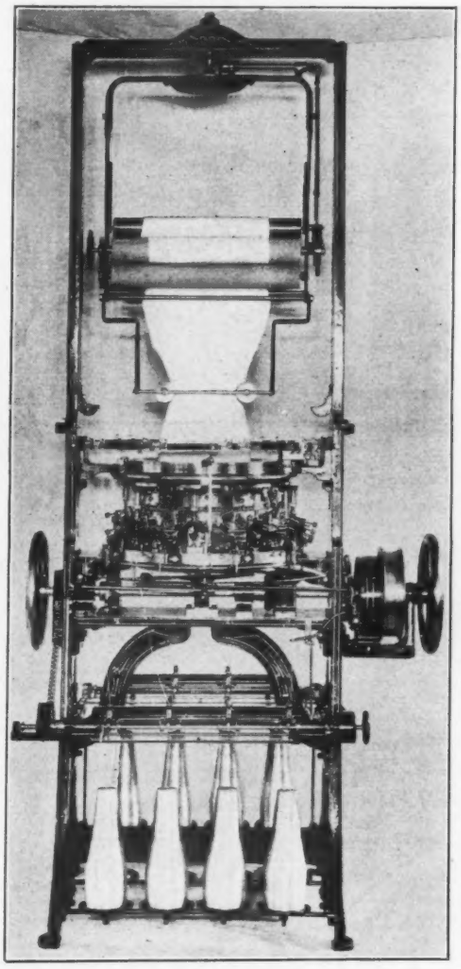
The New York representative of a mill in North Carolina which is equipped with 45-gauge machines exclusively was visiting northern mills a week or two ago in search of 42-gauge all over silk chiffons, for spot and very nearby delivery. Some of the 45-gauge machines in the mill for which he is the selling agent were reported idle at the time. It seems that in working downward in price, retailers unconsciously increased the demand for 42-gauge which two years ago represented approximately 50 per cent of the total production of silk full-fashioned hosiery. Price descent began while it was believed in the trade that 45- would largely supplant 42-gauge. Now, it would appear, 42- is the more popular gauge of the two. It is, in any event, in more active demand, and there exsists a feeling among manufacturers that it may continue as a bread-and-butter number; it is noted that work on at least two new plants to be equipped with 45-gauge machines is being held up, pending a change in market conditions.

The pivotal number of a well known direct-to-retailer mill selling under a nationally advertised brand is a seven-thread stocking with lisle hem. Both seven and eight thread 42-gauge from competing mills are quoted at the same price to jobbers. A seven-thread 42-gauge is and for more than a year has been a dollar leader in a Philadelphia establishment rated as one of the exclusive shops for women. Retail prices for hosiery of this type appear to have escaped disturbance in the general shake-up in the markets, and this may be said of practically all established dollar to $1.25 lines.

For large retailers to drive toward a still lower level, it is realized, would result in driving numbers of small specialty shops out of business and make manufacturing a more precarious undertaking. It seems a fairly safe assumption that prices, barring what distress goods will fetch, were at the bottom in March for the initial spring selling. This was indicated in the better flow of orders from jobbers who have got to have stocks for the very cautious element in the retail trade that cannot be regarded an outlet for nationally advertised brands, but must be provided with as prompt service as that supplied by the direct-to-retailer larger mills. Much of this trade finds good use for 39-gauge silk hose.

Silk to top five thread 39-gauge, described as regulars, were offered quite recently at $7.50 a dozen, for a lot in the hands of a speculator who boasted that "we have parties with $100,000 with which to buy distress quality hose for cash." The 39-gauge in the in-

Resiliency of Fabric!



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Representatives in All the Principal Countries of the World

stance referred to were not "snapped up", from which it was inferred by some buyers that the stockings were not exceptional for dollar value.

Rayon to top full-fashioned hose of medium gauge is offered by a Philadelphia commission house for $6.75 a dozen. The fabric is described as in the rayon group, no distinguishing term being used in its description. It is 75 cents a dozen lower than standard Bemberg to top full-fashioned, a strong number in a broad way because it meets the call for a dollar stocking that is serviceable. Since the markets are well supplied with dollar pure thread silk 42-gauge, Bemberg of 39-gauge necessarily is not receiving as much attention as a year or two ago, but appears to be moving, still, in right good volume, from a few mills.

Notwithstanding the low prices for regulars of silk construction, there is increasingly strong demand for irregulars, but not at relative value. Buyers scouring mills in March were offering $4.50 a dozen for seconds of chiffons and medium service weight of mills whose lines are rated well in the better jobbing circles. With many mills idle and partly idle, the markets appear to have been pretty well cleared of seconds other than nationally advertised brands which usually are found in only the better class stores.

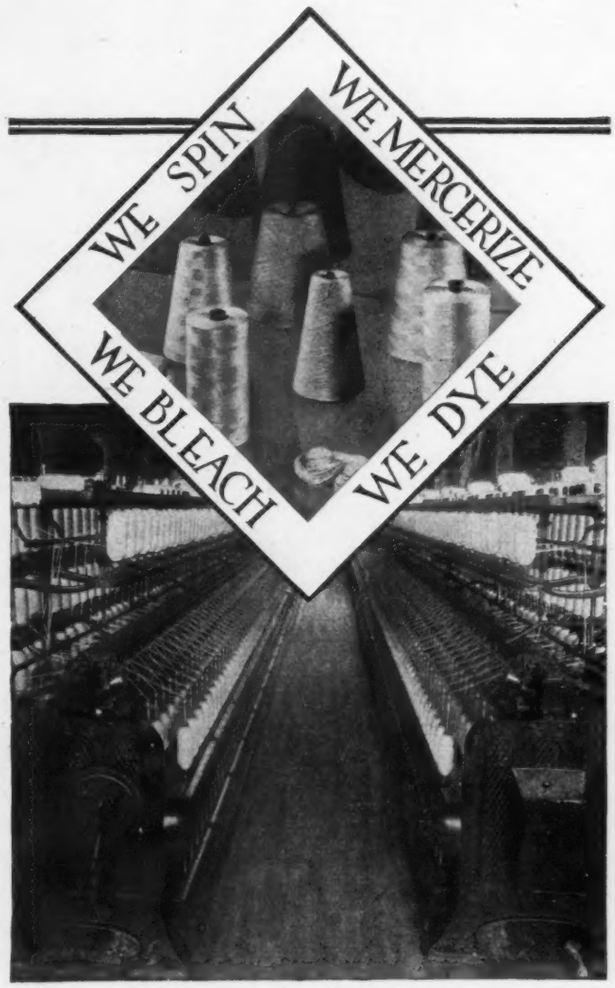
Hosiery repair shops report curtailment so general that it is "hard to find repair work in mills". Reports of idle plants are confirmed by unemployed mill operatives canvassing them for work. In some sections plants have been kept going, at least in part, out of consideration for employees, according to certain manufacturers who say that otherwise they would have closed down. This is true only of sections where economic conditions are especially serious.

The "Inside-Out" Silk Stocking.

Inside-out silk stockings are not causing the furore that some predicted for them. Price was against them, say buyers for leading stores. John Wanamaker's Philadelphia store was among the first to feature the reverse stocking in advertising. It came out at $1.95 a pair, comparing with $1.50 for four-thread 45-gauge picot top, seamed and worn as hosiery was intended to be worn. The excuse for the innovation is the proposal the surface of the fabric on the inside of a silk stocking is less lustrous and that the wales are hardly distinguishable. There is a hesitancy of many manufacturers to seam stockings from the outide, intending they shall be worn inside-out, and many dealers are as hesitant to put them in stock, as it is a question what might be done with left-over stocks in the event the fad be suddenly abandoned. It is difficult to locate any store buyer who professes to believe it ever will become popular. But, it is pointed out, whatever appeals to vanity can be put across and a fancied price advantage is a sure puller.

Profit in Mill Door Hosiery Sale.

A manufacturer of women's silk full-fashioned in an interior Pennsylvania city where there are several mills, all conceded to be producing hosiery of only good average construction, has a mill door sale for the public every Saturday forenoon. There are three stations on the first floor where women may buy stockings



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Standard Yarn—natural, bleached, mercerized and dyed —every process carried on in our own plants to the most rigid specifications, assures you the quality you require for profitable reproduction.

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Standard
MERCERIZED YARN

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Twenty-sixth Annual

KNITTING ARTS EXHIBITION

MAY 12, 13, 14, 15, 16

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Do you realize that the largest knitting machine manufacturers in the industry, together with the manufacturers of mill supplies and accessories, exhibit their product at the Commercial Museum each year for your benefit—so you can see the latest improvements and progress made from year to year in this vast industry?

This, the twenty-sixth annual Knitting Arts Exhibition, will open Monday, May 12, and close Friday, May 16. Plan to visit this great display of knitting machinery and allied products, virtually all of which are in operation.

Every mill official should attend and encourage his employees to do so. There will be a wealth of ideas to take to your factory in way of improvements, short-cuts, and methods of increasing production.

Tickets may be secured from Exhibitors or by communicating direct with the management

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National Association of
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at something less than regular retail prices, and that they relish the idea is evidenced by the sales last year averaging more than $1000 per half-Saturday. As it is a cash-and-carry business, the ladies may pay only a dollar a pair for stockings which are sold to the mill's regular trade—jobbers and large retailers—for around $9 a dozen. On higher price numbers, up to 45-gauge, the mill takes down from its Saturday retail customers $4 to $5 a dozen more than if the stockings went into distribution in the regular way. The ladies pay about as much to the mill as they might for comparable stockings at a department store special sale. But they enjoy the satisfaction of buying from the mill, particularly as they like the stockings and feel they are, of course, getting the hosiery at a saving from retail prices. The manufacturer enjoys a measure of confidence that many of the stores do not. He sells no hosiery to jobber or retailer in the city where the mill ranks as one of the important industries. Recently two other mills in the same industrial area began mill door retail sales every Saturday. It is only what has been done in a quiet way in certain sections for some years. It is profitable to the mills engaged in it and they cannot be accused of competing with dealer customers, for they have none, shipping to only the larger cities.

Seamless Quiet in Full-Fashioned Price War.

Seamless silk hosiery for women has not been active since price competition in full-fashioned became exceptionally severe, say some of the leading manufacturers of the circular knit. While heels of fancy design are holding well in seamless-knit stockings, manufacturers say, they find no particular evidence of popularity for the narrowed and French heels. Two-point in a variety of designs seem, in some respects, to be a distinguishing feature of the circular knit.

Good Times Seen for 300-Needle Plain Back.

Although manufacturers feel it is too early to forecast a repetition of last summer's bareleg fad, they appear sincere in the opinion that plain back 300-needle sheer hose will occupy an important place in the season's hosiery markets, and they are banking upon a strong reaction to the spiral knit finer gauge, 340-needle, for example, to sell for as much and more as present production of picot top full-fashioned four-thread silk 45-gauge. Which means there is expectation 340-needle conforming to Guildmode specifications will be selling in retail stores for $1.65 a pair and up.

No manufacturer has many machines of this gauge and quite a few have but one each, and according to unofficial but apparently trustworthy reports, experimentation has proved quite satisfactory. If, as some maintain, there are but 4,000 spiral knit 300-needle machines in commission in American mills, there is seen little or no danger from over-production. The seamless trades are awaiting with much interest the outcome of the efforts under way for relief from the chaotic situation in full-fashioned and eventual adjustment of production to more nearly consumptive demand. As matters stand, it is maintained by traders, there is less activity, relatively, in seamless hosiery than in full-fashioned, but less demoralization.

Spinning Quality Into Yarns

Quissett's modern and efficient mechanical facilities for spinning yarns are necessities.

Of much more importance to the textile man, however, is the interest and utmost care exercised by Quissett workers throughout every process.

It is this human control that maintains the uniform high standard of Quissett Yarns . . . the element that adds confidence . . . the assurance of satisfaction . . . as an inherent, intangible value.

Carded and Combed Cotton Yarns in all numbers and Descriptions.

Ply Yarns our Specialty.

Egyptians, Sea Island, Peelers, Sakelarides, Pimas, and Peruvians.

Quissett Mill

New Bedford, Mass.

Wm. H. Butler, Pres.
Edward H. Cook, Treas.
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FADE-OMETER
Standardized Sunlight

At the left is the new improved Fade-Ometer, for testing sunlight fading of color in cotton fabrics.

LAUNDER-OMETER
Standardized Machine for Laboratory Washing Tests.

At the right is Launder-Ometer, adopted by the American Association of Textile Chemists and Colorists for washing tests.

Prestige and Profit Insurance for Modern Business

Manufacturers, Jobbers, and Merchants no longer trade upon a "sight-unseen" basis. Business success today depends entirely upon fair dealing in known quantities and known qualities. And the business establishments which guard their reputation most zealously build the greatest business successes.

It is not strange, therefore, the Fade-Ometer, the machine which has so simplified the testing of color to sunlight should have built up a national recognition in a space of 10 years, nor that it now numbers more than 2200 enthusiastic users.

Nor is it strange that its kindred device, Launder-Ometer, the machine which has reduced to a simple science the matter of testing color fastness to washing should have been warmly welcomed by buyers and sellers of colored fabrics everywhere.

Send today for the vitally interesting complete stories of these two modern assistants, and learn how they may be adapted to your immediate and lasting advantage and profit.

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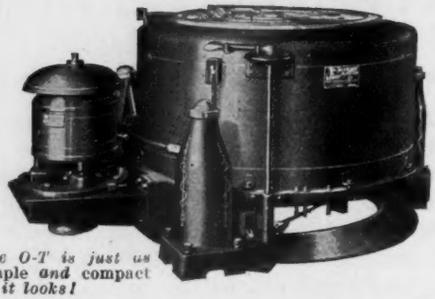

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Complications in Primary Markets for Children's Hose and Men's Socks

ANKLE SOCKS are having a retarding influence on spring business in children's hosiery, in the opinion of leading operators in the primary markets, who are less secretive when it comes to discussing market conditions than are most manufacturers. Full length, seven-eighths and five-eighths lengths are affected alike, it is stated by buyers for large establishments. They are putting the anklets from the smallest to the largest size in stock conservatively, and are even more cautious with relation to their commitments for infants' socks and juvenile hose. For it has been a question whether there is ahead a sockless or a stockingless summer. What appears the more general guess is that the anklets will be worn more extensively than last season, but not generally by girls old enough for full-length silk stockings, as these are fast taking their place among the full-fashioned devotees.

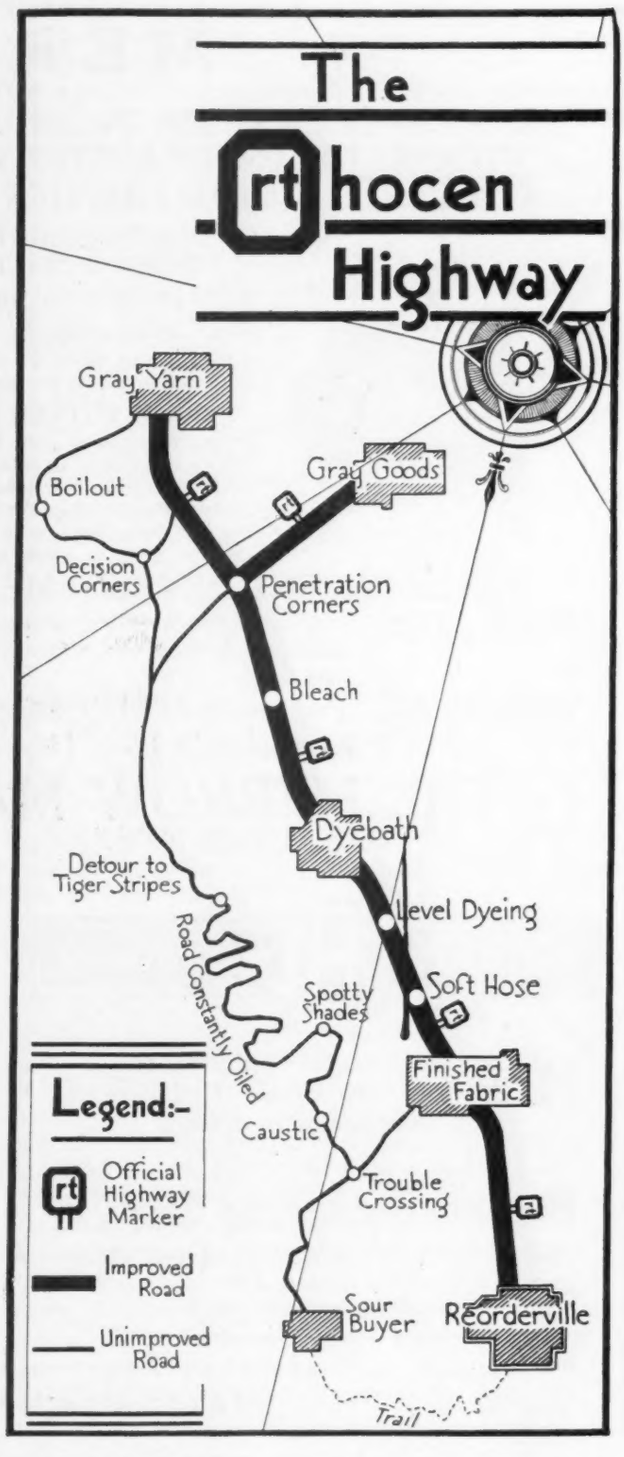
The confusing situation in children's hose is having its effect on the foreign as well as the domestic markets, according to several buyers who in March returned from Chemnitz after a tour of mills in Saxony and placing a few orders. These buyers state many were encountered in Saxony who bought less than 30 per cent of their purchases last year, due largely to uncertainty over the use of anklets. Infants' socks are especially in the balance as to the coming season, and imports are expected to be materially lighter. Besides, it is pointed out, reported preparation for putting on the market a new machine by a Philadelphia builder is already causing some concern as to developments by the time the opening for the next season will be staged.

Men's Half Hose Still Complicated.

Complications which have existed for some months in the markets for men's half-hose appear as far from being disposed of as at the beginning of the year. Manufacturers selling to jobbers report orders slow and small, with 35-cent fancies looming as the continued volume seller. Manufacturers feel the worst for the spring and summer seasons are behind them and, while excess production is regarded as standing in the way of satisfactory conditions, cancellations will be fewer and prices steadier on current low levels.

Manufacturers of good types of rayon-cotton mixture find that construction fairly satisfactory, but color combinations presented so often in new effects that the orders usually are viewed as uncertain until shipment has been made. Silk rayon mixture in tame patterns is expected to make a good showing in the business for spring and summer.

At the rate distribution of pure thread silk full-fashioned half-hose is declining, say some distributors, this type of sock will be ready for a place in museums within a few years. Some expansion in the field of plain color pure thread silk of circular knit construction is believed on the way, with more manufacturers knitting stouter fabric and improving wearing quality. It is pointed out that comparatively few colors are required, that plain colors are stable and losses from obsolescence insignificant, practically *nil*, it is



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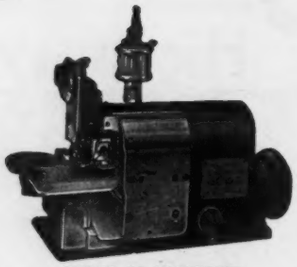

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For simultaneously trimming and joining ends of cotton, silk or woolen piece goods with a

FLAT BUTTED SEAM

Permits goods to pass through finishing machines, uninterrupted, for such operations as Shearing, Calendering, Mercerizing, Bleaching, Dyeing and Printing—with *remarkable saving*—both in labor and fabric.

Butted Seam, natural size, made by STYLE 60 ABB MACHINE on Cotton Goods which have been subsequently processed. The STYLE 60 D3B makes a similar though much wider seam designed for use on sleazy or loosely woven goods to insure holding.

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stated by retailers having an average representative clientele.

Jobbers Expected in Heavy Underwear Markets in April; Awaiting Price Move

SIDELIGHTS on underwear primary market conditions disclose wide disparity in the amounts of business taken by manufacturers of practically similar lines of heavy weights. Some have, undoubtedly, booked encouragingly large orders from a few of their customers whose names appear on their ledgers year after year. These are in a small minority, judging from expressions of opinions by those closest to the market situation and somewhat familiar with the coming and going of buyers, where they put in their time when in New York, and when and by whom visited in their home towns. It is a common belief that most of the jobbers who have placed contracts, handed them to visiting salesmen or mill executives after a parley with the merchandise heads. As there are virtually no accusations of price cutting, it is assumed there is little or no recourse to that type of competition for prying loose the orders which jobbers have been holding back until well along in April.

Numbers of jobbers had tried to impress upon mill heads an intention to buy nothing before the end of March and a determination to specify latest possible deliveries. Mill captains who accepted this as an ultimatum, of course saw there was nothing to be gained by revising prices in March. Buyers, on the other hand, said there would be nothing gained for them if they bought before April or, in any event, until there was more assurance that prices would hold for the season. Distributors of branded lines whose producers maintain sales promotion campaigns, and give their trade absolute price protection and do practically all that needs be done to put the underwear in the consumer's wardrobe, have placed firm orders for a reasonable part of their prospective needs. Had they not done so, some would have lost the lines for their exclusive territory.

One of the recognized shrewd and successful buyers of underwear who has headed that department of a leading jobbing house for years, is fast coming over to the camp of the branded line producers. Only a few years ago he was a stickler for a brand controlled by his jobbing house. He reasoned his prices were lower than those for the nationally branded goods. Now, he says, he feels there is an advantage in the trademarked that is extensively advertised and has back of it intensive sales promotion, that is, provided he is given exclusive sale in given territory, so that his house will be free from competition with other distributors of the line. He describes it as a comfortable feeling to know that there is protection from price declines and price competition.

Another buyer holding like views as to brand and who some years ago sold no trade-marked underwear other than that carrying his personally controlled brand, says he is veering to brand, but is not quite ready to buy for fall and winter. He regards medium weight cotton ribbed union suits priced too high in comparison with heavy weights, pointing out that there is but 25 cents a dozen difference between current quotations for 16- and 18-pound suits, and prices for 12-pound suits. Holding that 18-pound suits are "priced about right," he feels that 12-pound suits, containing at least six pounds less of cotton, are "priced out of line". He professes to be hopeful of revisions, since underwear at the opening was said to be priced on the basis of 18 cents for cotton and the raw fiber has been selling down to around 14 cents.

As it has been demonstrated in manufacturers' purchases of raw materials that this year's lower values gave them no incentive to contract ahead, underwear buyers of unbranded lines have little difficulty in supplying an alibi for their absence from the market. But, although they have acquired no price advantage by delaying, they are commencing to show some uneasiness over reports of their rivals handling branded goods scheduled for some early deliveries, and may be expected to talk orders seriously before May days. Business in men's summer weights is spotty, cottons apparently lagging over prospective gains for rayons and the cut-and-sewed shorts with mere supporting straps instead of something to take the place of a shirt.

Swim Suits Less Active Than Year Ago; Jobbers Two Months Late With Sweaters

WHILE ACTIVITY in knitted outerwear is confined almost exclusively to bathing suits, jobbers have been buying on a far more conservative scale than in the first quarter of 1929. Some of the mills whose lines have made an especially strong hit with buyers are on full-time operating schedules, a few running plants overtime. Some complaint of price cutting is heard, but this is less general than in recent production seasons, and all in all, the bathing suit manufacturers as a body may be said to be fairly well situated as to orders. Some have received repeat orders and some are declining additional business except for deliveries after May. The mills that are begging orders are in a small minority. In this respect the situation appears as the reverse of that in sweaters.

Most of the sweater mills are in need of orders; a very few find it necessary to operate plants to capacity. Especially is there a slow pace in shaker knit sweaters, in which mills making for price are charged with reducing or virtually eliminating worsted yarn content. Women's light weight worsted sweater for spring have been sold fairly well ahead, so far as relates to staples. Cricket coats with golf hose to match have had a backward season, and business in sweaters for fall deliveries is waiting.

A reflex of the quiet market for knitted outerwear is seen in a listless situation in worsted yarns, of which spinners in and around Philadelphia are large producers. Production in the Philadelphia area in March was estimated as not above 60 per cent of spindle capacity.

Don't forget the Knitting Show, to be held at the Commercial Museum in Philadelpia during the week of May 12th, with a Durene meeting on Wednesday and the convention on Thursday.

The YARN MARKET

Philadelphia, Pa., March 15th, 1930.

FROM the standpoint of sales, the yarn market as reported here during the past month was exceptionally quiet. This was due principally to the fact that prices attained such a low level during the month that spinners could not afford to take orders, as by doing so they would suffer a loss, which in some cases would have been as much as two cents per pound.

Carded yarns during this period, which was from January 15th to February 15th, reached the lowest level known since July, 1927. The firm stand that spinners took in absolutely refusing to take orders that would not net them a profit no doubt aided dealers to a great extent in maintaining quotations.

During the first week of the present report period cotton experienced a rather noticeable slump, but spinners asserted that it would not affect yarn quotations in the least. However, the drop in the price of the raw product seemed to curb the aggressiveness of the buyers to such an extent that some spinners were making concessions in asking prices before the week was over. Many yarn men claimed that they hadn't seen business so quiet in years, but there was evident a strong feeling of confidence in the ability of the individual houses to weather the dull period, and there seemed to be little fear exhibited on the part of the yarn men of their customers going under. The majority felt that it would just be a case of standing still for awhile but that an opportunity for exercising a real aggressive selling effort would present itself sooner or later.

During the next week, which ushered in the new month, March, a limited rally in cotton drew no response whatever from yarn buyers. Further price reductions in carded weaving and knitting yarns were noted, although many spinners had stated that they were doing business on a rock bottom basis and that they would not take any orders at lower rates, which would cause them to incur a loss.

It appeared that many spinners during the month of February felt that there would be a change for the better during March, so they continued making cotton yarns, instead of curtailing. Trading at this time showed that there had been a rather substantial overproduction of such numbers as 30s/2 carded warps, single carded skeins and frame spun carded cones. Where heretofore 35 cents had been considered rather low for 30s/2 carded warps, they were at this time being offered at 34 cents. Some business in 24s single skeins was also placed at this time at 30 cents a pound.

There was a little more optimism prevailing among the spinners and yarn dealers during the next week than had been noted for some time. An increase in sales recorded did not warrant this optimism, but an increase in inquiries from carded yarn consumers showed that they were watching the market rather closely and that orders would follow. Yarn values continued more or less unsettled due to short sales, commission cutting, below cost selling by direct sellers, etc. One bright feature was that it seemed that there was more curtailing than had been evident for some time.

Very few spinners during the next week made any concessions in prices, and, in view of the fact that cotton reached a new low, 14 cents per pound, during the week, this seemed to indicate that most spinners were doing business on a rock bottom basis. This period of stabilization was certainly welcomed by the majority of yarn dealers, for during the past three weeks the market had been anything other than steady.

Philadelphia prices on March 15th follow:

Single Skeins

12s	26½	14s	27
16s	27½	20s	28 @28½
24s	30½	26s	31½
30s	33½		

Single Warps

10s	26½	12s	27
14s	27½	16s	28½
20s	29½	26s	32½
30s	34 @34½		

Two-Ply Skeins

8s	26 @26½	10s	26½ @27
12s	27 @27½	14s	27½ @28
16s	28½ @29	20s	29½ @30
24s	32	26s	33
30s	34½	40s	42

Two-Ply Warps

10s	27	12s	27½
14s	28	16s	29
20s	30	24s	32½
26s	33½	30s	35
40s	43		

Frame Spun Carded Yarn on Cones

8s	25	10s	25½
12s	26	14s	26½
16s	27	18s	27½
20s	28	22s	28½
24s	30	26s	31
30s	34	40s	40
30s dbl. carded	37	30s tying in	32½

Carpet and Upholstery Yarn in Skeins

8s and 9s 3-4 hard white warp twist	26
8s tinged tubes	23½
8s 3-4 hard twist waste	22

Two-Ply Combed Peeler Skeins and Warps

8s to 16s	41		20s	43	@44
24s	44	@45	30s	47	@48
40s	50	@51	50s	55	@56
60s	62	@63	70s	72	@73
80s	83	@85			

Single Combed Peeler Yarn on Cones

18s	37	24s	40½
30s	45	36s	47
38s	48	40s	49
50s	53½	60s	60½
70s	70½	80s	82½

Mule Spun Carded Yarn on Cones

10s	31	12s	31½
14s	32	16s	32½
18s	33	20s	33½
24s	36½	26s	37
30s	38	40s	45

Mule Spun Combed Peeler Yarn on Cones

10s	39	12s	40
14s	41	16s	42
18s	43	20s	45
22s	46	26s	47
28s	48	30s	49
36s	52	38s	54
40s	55		